

APPENDIX A
ENVIRONMENTAL APPENDIX

SEPTEMBER 2005

**FINDING OF
NO SIGNIFICANT IMPACT
&
ENVIRONMENTAL ASSESSMENT
for
PROPOSED MODIFICATIONS
To 5 GROINS (GMs)
BETWEEN BEACH MONUMENTS
R-27 AND R-31.5**

**BAL HARBOUR BEACH EROSION CONTROL
PROJECT**

**BAL HARBOUR
DADE COUNTY, FLORIDA**



**U.S. Army Corps
of Engineers**
Jacksonville District
South Atlantic Division

**U.S. ARMY CORPS OF ENGINEERS (Corps)
JACKSONVILLE DISTRICT
OCTOBER 2005**

**FINDING OF NO SIGNIFICANT IMPACT (FONSI)
BAI HARBOUR BEACH EROSION CONTROL PROJECT
For the PROPOSED MODIFICATIONS To 5 GROINS (GMs)
BETWEEN BEACH MONUMENTS R-27 AND R-31.5**

I have reviewed the plans and the Environmental Assessment of the considered action. This Finding incorporates by reference all discussions and conclusions contained in the Environmental Assessment enclosed hereto. Based on information analyzed in the Environmental Assessment, reflecting data obtained from site examination and from cooperating Federal and State agencies having jurisdiction by law and/or special expertise, and from the interested public, I conclude that the considered action will have no significant adverse impact on the quality of the environment. The reasons for this conclusion are, in summary:

a. Site information review/coordination with the Florida State Historic Preservation Officer led to the determination that the planned action will not adversely impact historical or archeological resources.


b. Adherence to the Terms & Conditions of the U. S. Fish and Wildlife Service's 23 September 2005 Biological Opinion will reasonably ensure that threatened and endangered species will not be adversely affected.

c. The proposed project is consistent with Florida's Coastal Zone Management Program.

d. Benefits to the public will be the protection of upland residences, businesses and associated infrastructure as well as turtle nesting habitat from storm generated wave energy and severe erosion.

In consideration of the information summarized, I find that the considered action does not require an Environmental Impact Statement.

Date: 11/2/05


Robert M. Carpenter
Colonel, U. S. Army
District Engineer

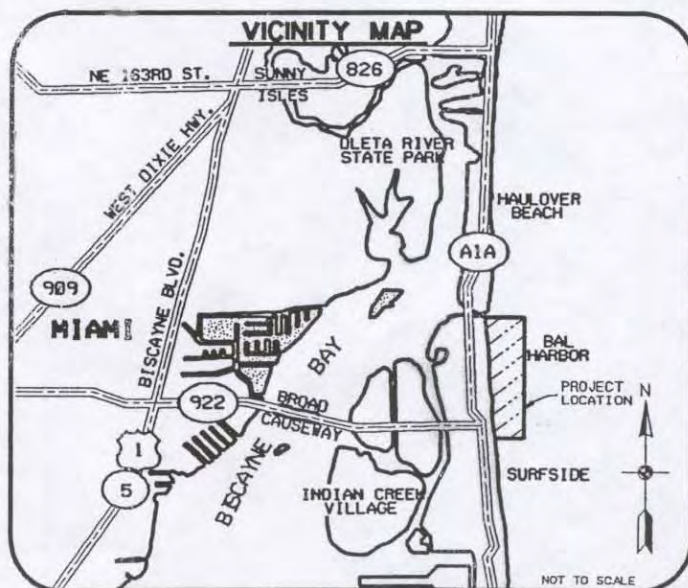
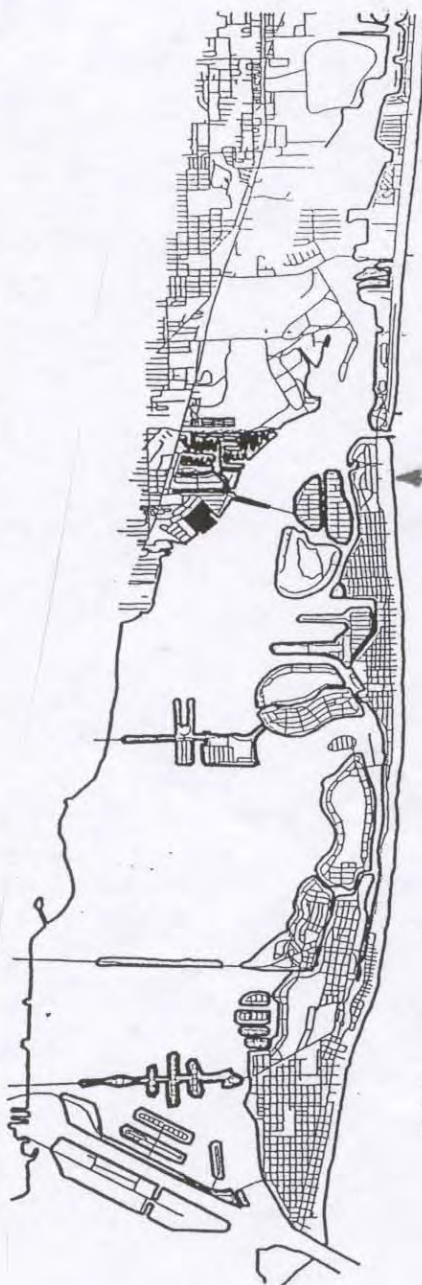
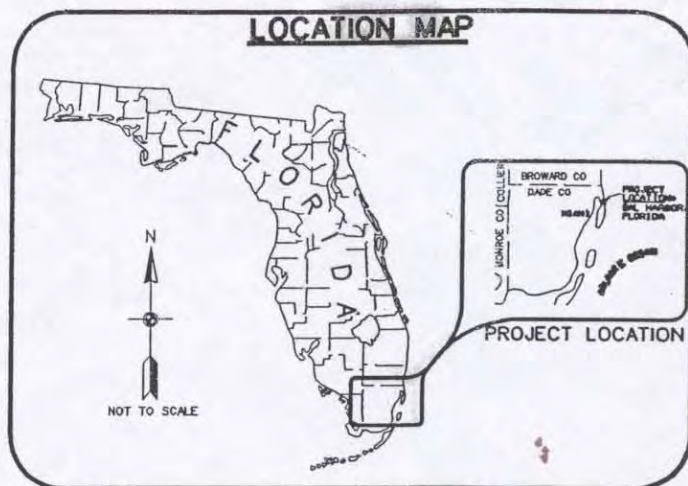
ENVIRONMENTAL ASSESSMENT (EA)
BAL HARBOUR BEACH EROSION CONTROL PROJECT
For the PROPOSED MODIFICATIONS To 5 GROINS (Gms)
BETWEEN BEACH MONUMENTS R-27 AND R-31.5

1.00 PROJECT PURPOSE AND NEED

1.01 Project Authority. The Beach Erosion Control and Hurricane Protection (BEC & HP) Project for Dade County, Florida was authorized by the Flood Control Act of 1968 (see figure 1, site map). In addition, Section 69 of the 1974 Water Resources Act (P.L. 93-251 dated 7 march 1974) included the initial construction by non-federal interests of the 0.85 mile segment along Bal Harbour Village, immediately south of Bakers Haulover Inlet. The Evaluation Report, Dade County BEC & HP Project, October 2001 evaluated the performance of the entire Dade County BEC & HP project over the past 20+ years. The report identified several erosional hotspots, including Bal Harbour, and formulated alternatives to reduce the higher erosion rates along these areas. Finally, the Detailed Design Report (DDR), Dade County BEC & HP Project, Bal Harbor Segment, Dade County Florida, October 2004 (USACE, 2004) recommended alternative plans to address the specific needs of the Bal Harbour Segment.

1.02 Project Location. The 0.85 mile project is on the south-east Florida coast in Dade County. Bakers Haulover Inlet borders Bal Harbour to the north and the town of Surfside is to the south. Figures 1,2 & 3, respectively show location, aerial view and photo of the restored beach.

1.03 Need for and Objectives of Action. Nourishment of Dade County Beaches has become a necessity to provide storm protection. The purpose of the project is to reduce loss of public beach front to continuing erosional forces and to prevent or reduce periodic damages and potential risk to life, health, and property in the developed lands adjacent to the beach. Continual erosion of the beach has resulted in the loss of nesting habitat for threatened and endangered sea turtles loss of protection from storm and hurricane damage and potential risk to life, health, and property. Recent storm impacts to the project (Hurricane Andrew in 1992, Hurricane Gordon in 1994, and the winter storms in 1996) have severely increased the need for the project. The Bal Harbour beach experiences higher erosion rates compared to other Dade County beaches. To improve the efficiency of shore protection between the south jetty and R-31.5, the Corps initiated the preparation of the DDR (USACE, 2004) to improve project performance in the subject area.



US ARMY CORPS
OF ENGINEERS
JACKSONVILLE DISTRICT

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Figure 2. Aerial photo of Bal Harbour's beach in the eroded condition with existing groin-field exposed.



Figure 3. Recently-completed renourishment, September 2003, Bal Harbour. New Groins/T-heads would be essentially encased in the renourished beach.

2.00 ALTERNATIVES

2.01 Alternative Selection. A combination of structural measures including groins, breakwaters and jetty modifications were studied to remedy the erosion along the subject reach of the SPP. The evaluation of alternatives relevant to engineering and least cost is analyzed and discussed at length in a DDR, USACE, (2004). The specific environmental effects of the selected alternative are discussed in this document. Although numerous structural and nonstructural plans were originally considered, the selected structural alternative proved to be the most cost efficient and resulted in a net reduction of structure/s on the beach as well. An exhaustive description and comparison of the effects of each original alternative developed; and, the reasons for alternative selection and/or dismissal are described in detail in USACE, 2004. An abbreviated evaluation of that process follows in this EA, which focuses on only the most cost effective and environmentally efficient alternatives.

Tables 18 & 19, respectively, summarize alternatives, and the final array of costs as discussed in the DDR (USACE, 2004).

TABLE 18 from DDR SUMMARY OF ALTERNATIVE PLANS	
Plan	Description
NA-1	No Action Plan, continued renourishment
NA-2	No Action Plan, continued renourishment, remove groins
S-1	Rehab Existing Groins
S-2	Construct New Groin Field
S-3	Construct T-Head Groin Field
S-4	Offshore Breakwaters
S-5	Combined Structures
S-6	Extend Haulover South Jetty
S-7	Sand Bypass Facility *
S-8	Close Haulover Inlet
B-1	Construct "Historic" Fill Template
B-2	Construct Fill – Altered Dimensions
B-3	Feeder Beach
B-4	Nearshore Berm
B-5	Perched Beach
I-1	Porous Groins
I-2	Reef Module Breakwater
I-3	Beach Mats

Table 19 (from DDR)
Cost Summary - Alternative Plans of Improvement, (USACE, 2004).

Alternative	Total
NA-1. The primary no-action plan: Bakers Haulover Inlet ebb shoal borrow area	\$6,576,000
NA-1. The primary no-action plan: Dade deepwater sites	\$6,659,000
S-1. Rehabilitation of existing groins.	\$1,842,000
S-2. Construction of new groin field.	\$2,265,000
S-3. Construction of tuned groin field. Selected Plan	\$2,768,000
S-4. Construction of offshore breakwaters.	\$3,637,000
S-6. Extension of Bakers Haulover Inlet south jetty.	\$8,661,000
S-7. Construction of sand bypassing facility. See note 1.	\$4,705,000
B-1. Construction of historic beach fill. Bakers Haulover Inlet ebb shoal borrow area	\$6,576,000
B-1. Construction of historic beach fill. Dade deepwater sites	\$6,659,000
B-3. Construction of feeder beach. Bakers Haulover Inlet ebb shoal borrow area	\$9,277,000
B-3. Construction of feeder beach. Dade deepwater sites	\$9,393,000
B-4. Construction of nearshore berm. Bakers Haulover Inlet ebb shoal borrow area	\$9,277,000
B-4. Construction of nearshore berm. Dade deepwater sites	\$9,393,000

Preliminary Evaluation of Alternatives.

Several criteria were used to evaluate the alternatives listed above, including effectiveness at reducing erosion throughout the project area, minimization of adverse impacts to adjacent areas, environmental compatibility, aesthetics, public safety, local sponsor preference, State of Florida permitting guidelines, longevity/storm survivability, and cost.

Many alternatives were dismissed based on the above criteria, with no detailed numerical modeling required. During the review of innovative alternatives for the Section 227 study (report prepared for another erosion hot-spot south of Bal Harbour) many of the above proposals were objectionable to Federal, State, and/or local government officials for various reasons, and were eliminated from further consideration. Accordingly, most are not discussed in this EA. For example, alternative I-3, which would cover the beach surface with geotextile fabric, was strongly opposed by the U.S. Fish & Wildlife Service, State, and local officials due to interference with sea turtle nesting, public safety (unable to drive vehicles, emergency etc. on protected surface), lack of longevity (UV degradation in the South Florida sun). Alternative I-1 was rejected for similar reasons.

The plan developed under alternative S-2 was considered economically and environmentally viable. It consisted of five rubble-mound groins spaced evenly at 850-foot intervals along the Bal Harbour shoreline. The northern three structures will be the same length as the renourished berm width, and the southern two structures will be tapered 6 degrees in length. Individual groin lengths from the ECL will therefore vary from 31.50 feet at the north end of Bal Harbour to 180 feet at the south end of Bal Harbour. All five groins will have a permeability of about 65 percent, which can be achieved by constructing the low-crested groins entirely of armor stone, with no core. The GENESIS-predicted renourishment interval for alternative S-2 is 6.8 years. This alternative provides an improved shoreline response and will be examined in greater detail.

The design of the rubble-mound structures is described as follows. The five existing king pile groins would be replaced by five rubble-mound groins. Rubble groins would be constructed along the existing alignments of groins 1, 2, 3, and 5. Groin 4 would be rebuilt 100 feet south of its present location. Little information is available on the design of the existing piles, particularly the depth of embedment. Most of the king piles are completely buried in the beach. Their condition is questionable. Therefore, only two construction methods to remove the piles are acceptable. The piles should be removed intact if possible but if the depth of embedment is such that pile extraction is not reasonably practical, the piles at groins 1, 2, 3, and 5 may be cut off at elevation +1.0 ft, mlw. In the latter case, foundation materials and armor stone would be placed over and around the cut-off king pile structure. The king piles at groin #4 would be removed entirely or cut at an elevation of -5 ft mlw, and the new structure constructed 100 feet to the south to provide a more uniform groin spacing along the project area. Due to the shorter length of the rebuilt groin 5, each of the estimated 12 existing piles seaward of the rebuilt end of groin 5 would be removed entirely, or cut at a depth of at least -5 ft mlw.

Following pile removal, the structures would be excavated to -3 feet mlw, coinciding with the maximum expected depth of scour. . Woven geotextile fabric would be placed beneath each structure in the excavated areas and marine mattresses would be placed on top of the geotextile cloth to form the structure's foundation. Finally, armor stones would be placed directly on the mattresses to construct the groins. Based on maximum expected breaking wave size at the structures a median armor stone size of 1.2 tons is required. The crest width would be 7.5 feet with side slopes of 1v : 1.5h. The armor layer would extend from a top elevation of +4 feet mlw down to the top of the foundation mats at elevation -2 ft mlw. The total volume excavated is 3,000 cubic yards. A total of 3,450 square yards of geotextile mat is required, and 3,250 square yards (2,000 tons) of bedding mattresses. About

7,140 tons of armor stone is required to construct the five groins. The estimated cost of alternative S-2 is \$2,265,000.

Alternative S-3. Construction of T- (or "Tuned-") Groin Field.

This option would be similar to option S-2, but with the addition of T-heads on some or all of the groins as shown in figure 4. The T-segments on the end of groins can increase performance of the groin field by reducing bypassing, by more effectively holding material between the structures, and by reducing rip currents and subsequent losses of fill into deep water. The T-head groin design has been used in similar locations in Florida to contain downdrift losses near inlets and is well-suited to this project area, particularly in regards to holding sediment along the erosive northern end of the project.

The newest version of GENESIS-T was used to simulate the addition of T-head structures. Previous versions of GENESIS do not allow the simulation of T-head groins, or any combination breakwater/groin structure. The same series of model simulations from alternative S-2 were performed using various combinations of T-head configurations. The guidelines developed during simulations for alternative S-2 relating to structure lengths, permeabilities, position, etc were applied to the T-head structures.

Figure 4. Plan view of Alternative S-3 - Recommended Plan.

In general, it was noted that the T-head structures held beach fill between the groins more effectively than the non T-head structures from alternative S-2. In some cases this effect was detrimental, such as along the south end of the fill, where the retention of fill resulted in increased downdrift erosion. The main advantage of the T-heads was apparent at the north end of the project. As discussed previously, this region along the northern 2,000 feet of Bal Harbour is the most rapidly eroding portion of the project. Material is transported out of this area in both directions, with a large percentage of losses due to sediment transport northward around the jetty and into the inlet. T-head groins would be used along this area to retain fill on the beach more effectively than the non T-head groins. The T-head structures generally maintain the shoreline position at a point further seaward than non T-head groins along the northern Bal Harbour shoreline.

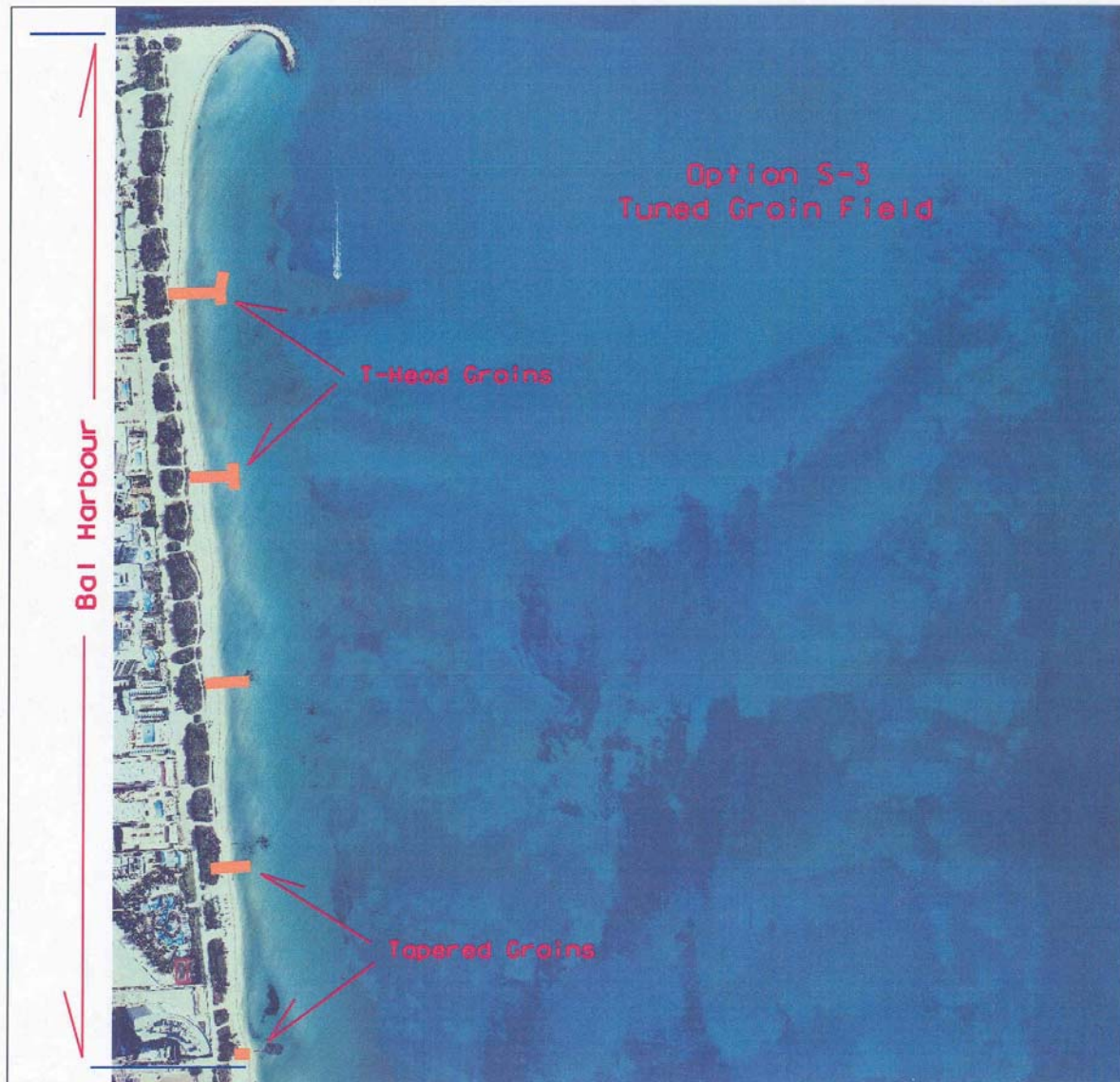


Figure 4. Plan view of Alternative S-3 in an eroded state.

A similar iterative procedure as was used to develop alternative S-2 was used to optimize the configuration of T-groins for alternative S-3. T-heads were simulated on various combinations of groins, and in addition a wide variety of groin lengths, permeabilities, and spacings were simulated. The groin field layout with the most favorable shoreline response consisted of a design similar to alternative S-2, but with T-sections on the northern 2 groins.

The final design for alternative S-3 consists of a five-groin system, with an average groin spacing of 850 feet, and groin

permeabilities of 65 percent. The northern three groins extend seaward to the post-nourishment msl line, and the southern two groins are tapered 6 degrees to reduce downdrift effects. The T-head on the northern groin (groin #1) will extend 50 feet to the north and 25 feet to the south from the seaward tip of the structure. The northern T will be angled 10 degrees toward seaward, to face directly into the average incident wave direction (from the STWAVE analysis). The southern segment of the T on groin #1 will be shore-parallel. The T-segments on groin #2 will each be 25 feet long, and will both be oriented in a shore-parallel direction. Groins #3, #4, and #5 will follow the same design as in alternative S-3.

The predicted renourishment interval for alternative S-3 is 8.5 years along the area north of the nodal point, and over 15 years along the shoreline south of the nodal point. The increased renourishment interval (compared to alternatives S-1 and S-2) is due to the T-heads' ability to better hold material within the shoreline cells between the south jetty and groin 1, and between groin 1 and groin 2. This alternative should result in substantial cost savings, as the southern portion of Bal Harbour could be renourished during every second renourishment. The improved performance of this plan is expected to reduce the renourishment interval at Bal Harbour from 3 to only 2 renourishments at Bal Harbour over a 21 year period. This would be due to the more favorable performance of the T-heads versus the straight rubble-mound groins. Accordingly, alternative S-3 was recommended for further investigation.

The design of alternative S-3 is essentially the same as that described for alternative S-2 except for the addition of T-heads on groins 1 and 2. As in alternative S-2, groins 1, 2, 3, and 5 would be built over the existing king pile structures, while groin 4 would be rebuilt 100 feet south of its present location. The stone sizes and cross-sections would be identical to those proposed in alternative S-2. As in alternative S-2, all existing king piles seaward of the vegetation line would be removed, or cut at the grades specified. Due to the shorter length of the rebuilt groin 5, each of the estimated 12 existing piles seaward of the rebuilt end of groin 5 would be removed entirely, or cut at a depth of at least -5 ft mhw.

The total quantities of stone required to construct alternative S-3 are as follows. The quantity of 1.2-ton armor stone is 6,252 tons, quantity of foundation mattresses is 1,759 tons (= 2,870 sq yds.), and quantity of geotextile fabric is 3,032 sq yds. The total volume of excavation is 4,500 cy. The estimated cost of constructing alternative S-3 is \$ 2,768,000.

2.02 No Action. The no action alternative plan is considered non-viable in light of the high erosion rates of this beach and the potential for infrastructure damage. If implemented, the

beaches would further erode increasing the threat of damage to recreation, residences, businesses and even human life. This alternative is not considered viable.

2.03 Recommended Plan - Alternative S-3. The recommended plan of improvement along the Bal Harbour shoreline consists of three primary elements: removal of the five existing groins, reconstructing these five groins in an improved configuration, and continued periodic beach renourishment. For simplicity, the groins will be numbered 1 through 5 proceeding from north to south along the Bal Harbour shoreline. Each element of the plan is briefly described below.

Alternative S-3 (construction of T-head tuned groin field) provides the lowest average annual equivalent project cost throughout the remaining 21 years of the project's 50-year period of economic analysis. This cost is substantially lower than the annual costs of the other alternative plans, primarily because the longer renourishment interval of alternative S-3 results in only two future renourishments throughout the remaining 21 years of the project; whereas the remaining plans each require three renourishments. A comparison of the annual cost of alternative S-3 also shows that the cost of the proposed improvement is less than the cost of maintaining the project in its existing configuration (NA-1) as shown in Tables 18 and 19.

Removal of Existing Groin Field. Five king-pile groins were constructed along the Bal Harbour shoreline prior to the construction of the Federal beach renourishment project in 1975. These groins have deteriorated over the years and are currently ineffective and will be removed. Removal will consist of extracting the concrete piles and excavating any of the horizontal panels between the piles which might remain. Removal of each groin will extend from the seaward tip of each structure landward to the vegetation line. No disturbance of the existing beach vegetation will be allowed during removal or reconstruction of the groins.

Little information is available on the design of the existing piles, particularly the depth of embedment. Most of the king piles remain buried in the beach fill and the top elevations of those piles are not known. Therefore either of two methods of construction will be acceptable, depending on the practicality of removing the piles. The piles should be removed from the vegetation line to the seaward end of each structure if possible, but if the depth of embedment is such that pile extraction is not reasonably practical, piles may be cut as follows : the piles which will be covered by new groin construction may be cut at elevation +1 foot, mhw; the piles which fall outside of the footprint of the new rubble groins may be cut at elevation -5 feet, mhw. The deeper cut-off elevation for piles outside of the

footprint is required for safety, environmental, and aesthetic reasons.

Similarly, the required depths for removal of the existing rubble and concrete panels is as follows. For areas within the footprint of the new rubble-mound groins, rubble and panels must be excavated to the base elevation of the foundation, -3 feet mlw. For all areas outside of the footprint of new groin construction, these materials must be excavated to a minimum depth of -5 feet mlw.

Reconstruction of Groin Field. Following removal of the five king pile groins, groins 1, 2, 3, and 5 will be rebuilt along the same shore-perpendicular alignments using a rubble-mound design. In order to achieve a more uniform spacing throughout the groin field, groin 4 will be reconstructed 100 feet to the south of its present location. By relocating groin 4 in this manner, an even spacing of about 800 feet will be achieved between each of the five groins. The landward limit of construction for each of the five rebuilt groins is the vegetation line, located between 80 and 110 feet seaward of the Erosion Control Line (ECL). All five rebuilt groins will use the same rubble-mound design, which is described below.

In order to better stabilize this reach of the Bal Harbour shoreline, the following improvements to the groin field are recommended. Groins 1 and 2 will be reconstructed along their present alignments to the post-nourishment mean high water line, and T-heads will be added to the seaward ends of both structures to reduce the losses of sediment from this reach of shoreline. These T-segments will extend 25 feet outward from the centerline of each jetty. Both T segments on groin 2 and the south T segment on groin 1 will be oriented roughly shore-parallel. The north T segment on groin 1 will be oriented 6 degrees to the east of shore-parallel, and will extend outward 50 feet from the structure's centerline. The orientations of all T-head segments were chosen to lie perpendicular to the predominant direction of incoming wave energy for maximum effectiveness. Groins 1, 2, and 3 will be rebuilt to the same seaward limit as the original kingpile structures; groins 4 and 5 will be shorter than the original structures.

The remaining groins to the south (groins 3, 4, and 5) will be reconstructed without the T-head segments. Furthermore, as an added measure to prevent downdrift erosion caused by excessive impoundment of sand behind the structures, groins 4 and 5 will be tapered in length to allow increasing amounts of bypassing near the southern limit of the project. A plan view of the proposed reconstructed groin field is shown in figures 4&5. The lengths of each groin to be removed and rebuilt are shown in table 1 below.

Table 1

Lengths of Groin Removal and Reconstruction - Recommended Plan

	Length Removed(1)	Length, Rebuilt(1)
Groin 1	220	220 (295) (2)
Groin 2	190	190 (240) (2)
Groin 3	200	200
Groin 4	205	120
Groin 5	215	60

(1) Measured from vegetation line

(2) Including T-head sections

The cross-section of each groin will be identical. Armor stone size will be 1.2 tons, corresponding to an average stone size of about 2.5 feet. Armor stone density will not be less than 165 pcf. The crest elevation will be 4 feet mlw and crest width will be 7.5 feet. The foundation of each groin will be constructed at -3 feet mlw, which coincides with the maximum expected depth of scour around the structures. A marine mattress bed layer 1 foot thick will be constructed under the armor layer, and no intermediate or core stone will be used. The foundation will consist of graded bedding stone contained within marine-grade mesh mattresses, and the mattresses will extend 5 feet beyond the limits of the armor stone for scour protection. Woven geotextile fabric will be placed under the foundation mattresses. A cross-section of the proposed design is shown in figure 4 of the April 9, 2004 scoping letter. The T-sections on groins 1 and 2 will also be constructed using this design cross section.

Periodic Renourishment. The renourishment plan consists of periodic rebuilding of the same 240-foot construction berm. Typical renourishment volumes are 250,000 to 350,000 cubic yards, and renourishment would be required every 6-8 years. In addition, material dredged from the adjacent Federal navigation project at Bakers Haulover Inlet may be placed along eroded portions of the Bal Harbour shoreline periodically to further extend this renourishment interval.

Currently, Dade County's originally-permitted offshore borrow sites are depleted, except for a small area located south of Government Cut. Use of this area is being reserved exclusively as a source of emergency beach fill, and there are no remaining permitted offshore borrow areas available. The ebb shoal at Bakers Haulover Inlet was used as a borrow source for the 2003 Bal Harbour beach renourishment. This shoal naturally accretes and may be used again in the future. Periodic use of this shoal as a long-term borrow site for Bal Harbour is recommended, as it essentially amounts to mechanical bypassing of sediment around Bakers Haulover Inlet and mimics the natural bypassing process.

Figure 5. Alternative S-3 showing nourished and eroded states of Bal Harbour Beach.



Construction Methods. Removal of the five existing king pile groins and reconstruction of the five modified groins could be accomplished using either of two methods:

a) The existing structures could be removed and new groins constructed using a combination of land-based and barge-based construction while the beach is in a fully-eroded condition prior to the next beach renourishment. Construction materials would be transported to the site and placed by barge-mounted equipment, reducing the area needed for stockpiling materials along the Bal Harbour shoreline. Some land-based equipment and stockpiling of materials would still be required to construct the upland portions of each of the five groins. Offshore operations could be conducted only during periods of calm weather.

b) The existing structures could be removed and reconstructed from land immediately following the next beach renourishment. Since each of the of the five groins extends to a maximum seaward distance of the post-renourishment mean high water line, construction could be conducted entirely on land if the groin rehabilitation followed the next beach renourishment. Excavation across the 240-foot wide berm would be required, and all materials and equipment would be stockpiled on site. This method of construction would be much less dependent on weather than the barge-based construction method.

The contractor would be allowed to choose either construction method, or a combination of both methods. For example, the contractor may choose to remove the existing king pile groins while the beach is in the fully eroded (pre-renourishment) condition, then construct the new structures after placement of the renourished beach. Since only the northern three groins extend to the mhw line, and since significant erosion of the beach fill is not expected during the summer months when renourishment is typically performed, erosional losses of the beach fill during groin construction are expected to be minimal.

3.00 AFFECTED ENVIRONMENT

3.01 General Environmental Setting. The shoreline along Bal Harbour is lined with hotels, condominiums, and other commercial establishments. The area is used extensively for recreation.

3.02 Vegetation. The dune system in Dade County between Government Cut and Bakers Haulover Inlet is largely artificial and was built as part of the Dade County BEC & HP Project. Dominant plant species in the dune communities include sea grapes, *Coccoloba uvifera*; the beach morning glory, *Ipomoea pes-caprea*; beach bean, *Canavalia rosea*; sea oats, *Uniola paniculata*; dune panic grass, *Panicum amarulum*; bay bean,

Canavalia maritima. The beach berry or inkberry, *Scaevola plumieri*; sea lavender, *Mallotonia gnaphalodes*; spider lily, *Hymenocallis latifolia*; beach star, *Remirea maritima*; and coconut palm, *Coco nucifera* are also present.

Seasonally, there is extensive macroalgal growth in the offshore soft bottom areas, with species of green algae (*Caulerpa sp.*, *Halimeda sp.*, and *Codium sp.*) being particularly abundant in the summer and the brown algal species (*Dictyota sp.* and *Sargassum sp.*) being more abundant in the winter (Courtenay et al., 1974; Florida Atlantic University and Continental Shelf Associates, Inc., 1994). The sea grass *Halophila decipiens* has been observed offshore of Dade County, but is considered seasonal (April through November) in these offshore soft bottom areas.

3.03. Threatened and Endangered Species. Sea turtles are present in the open ocean year-round offshore of Dade County because of warm water temperatures and hardbottom habitat used for both foraging and shelter. The predominant species is the loggerhead sea turtle, *Caretta caretta*, although green turtles, *Chelonia mydas*; leatherback turtles, *Dermochelys coriacea*; hawksbill turtles, *Eretmochelys imbricata*; and Kemp's ridleys, *Lepidochelys kempii* are also known to exist in the area. All the sea turtles except for the loggerhead are listed as endangered. The loggerhead is listed as threatened. Sea turtle nesting in Dade County occurs from May through September. The density of nesting along the Dade County shoreline north of Government Cut is relatively low. The frequency of nesting along the beach at Bal Harbour has ranged from 12 nests in 1989 to 29 nests in 1999 with the highest occurring in 2003 at 33 nests (MIAMI-DADE, PARK&REC 2003, unpublished nesting data). The number of false crawls ranged from 1 in 1989 to 33 in 2003. The loggerhead accounts for the majority of the nesting in the county with occasional nesting by green and leatherback turtles. During the sea turtle nesting season, the Miami-Dade County Park and Recreation Department (MDPRD) conducts daily surveys and relocates nests found along the beach from Sunny Isles south to Government Cut (includes Bal Harbour). This is done to prevent poaching or nest destruction due to beach maintenance, emergency vehicles which access the beach and other human related causes (Flynn 1992). All nests found during the surveys are relocated to a central hatchery on Miami Beach (pers. comm., B. Flynn, Dade Co. Dept. of Env. Res. Mgmt., 1993). The MDPRD continues to relocate loggerhead nests to the hatchery facility. However, Green and Leatherback nests remain in situ and the eggs are allowed to hatch naturally. Nevertheless, these nests are also closely monitored by the MDPRD.

West Indian Manatee. The estuarine waters around the inlets and bays within Dade County provide year-round habitat for the West Indian manatee, *Trichechus manatus*. Although manatees have been observed in the open ocean, they feed and reside mainly in the

estuarine areas and around inlets. No significant foraging habitat is known to exist in the areas around the project sites, nor have manatees been known to congregate in the nearshore environment within the project area.

Other Threatened Endangered Species. Other threatened or endangered species that may be found in the in the coastal waters off of Dade County during certain times of the year are the finback whale, *Balaenoptera physalus*; humpback whale, *Megaptera novaeangliae*; right whale *Eubalaena glacialis*; sei whale, *Balaenoptera borealis*; and the sperm whale, *Physeter macrocephalus catodon*. These are infrequent visitors to the area and are not likely to be impacted by project activities.

3.04 Fish and Wildlife Resources. The beaches of southeast Florida are exposed beaches and receive the full impact of wind and wave action. Intertidal beaches usually have low species richness, but the species that can survive in this high energy environment are abundant. The upper portion of the beach, or subterrestrial fringe, is dominated by various talitrid amphipods and the ghost crab, *Ocypode quadrata*. In the midlittoral zone (beach face of the foreshore), polychaetes, isopods, and haustoriid amphipods become dominant forms. In the swash or surf zone, beach fauna is typically dominated by coquina clams of the genus *Donax*, the mole crab, *Emerita talpoida*. All these invertebrates are highly specialized for life in this type of environment (Spring, 1981; Nelson, 1985; and U.S. Fish and Wildlife Service [USFWS], 1997).

Shallow subtidal soft bottom habitats (0 to 1 meters [0 to 3 feet] depth) show an increasing species richness and are dominated by a relatively even mix of polychaetes (primarily spionids), gastropods (*Oliva sp.*, *Terebra sp.*), portunid crabs (*Arenaeus sp.*, *Callinectes sp.*, *Ovalipes sp.*), and burrowing shrimp (*Callinassa sp.*). In slightly deeper water (1 to 3 meters [3 to 10 feet] depth) the fauna is dominated by polychaetes, haustoid and other amphipod groups, bivalves such as *Donax sp.* and *Tellina sp.* (Marsh et al., 1980; Goldberg et al., 1985; Gorzelany and Nelson, 1987; Nelson, 1985; Dodge et al., 1991. Offshore soft bottom communities are less subject to wave-related stress than are nearshore soft bottom communities. They exhibit a greater numerical dominance by polychaetes as well as an overall greater species richness than their nearshore counterparts.

Surf zone fish communities are typically dominated by relatively few species (Modde and Ross, 1981; Peters and Nelson, 1987). Fish species that can be found in the surf zone include, Atlantic threadfin herring, *Opisthonema oglinum*; blue runner, *Caranx crysos*; spotfin mojarra, *Eucinostomus argenteus*; southern stingray, *Dasyatis americana*; greater barracuda, *Sphyrna barracuda*; yellow jack, *Caranx bartholomaei*; and the ocean

triggerfish, *Canthidermis sufflamen*, none of which are of local commercial value. Most of the fish making up the inshore surf community tend to be either small species or juveniles (Modde, 1980).

3.05 Coastal Barrier Resources. There are no designated Coastal Barrier Resource Act Units located in the project area that would be affected by this project.

3.06 Water Quality. Waters off the coast of Dade counties are classified as Class III waters by the State of Florida. Class III category waters are suitable for recreation and the propagation of fish and wildlife. Turbidity is the major limiting factor in coastal water quality in South Florida. Florida state guidelines set to minimize turbidity impacts from beach restoration activities confine turbidity values to under 29 NTU above ambient levels outside the turbidity mixing zone for Class III waters.

3.07 Essential Fish Habitat. When the project is in it's eroded state - habitats within the project area would be designated as Essential Fish Habitat (EFH) as defined in 1996 by amendment to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), 16USC 1801 et seq. Public Law 104-208. Federal agencies that fund, permit or carry out activities that may adversely impact EFH are required to consult with the National Marine Fisheries Service (NMFS) regarding potential effects of their actions on EFH. In conformance with the 1996 amendment to the Act, the information provided in this EA comprises the required EFH assessment and has been coordinated with the NMFS.

The proposed project is within the South Atlantic Fishery Management Council (SAFMC) jurisdiction and is located in areas designated as EFH for water column, sandy bottom, and adjacent to hardbottom, coral and artificial reef. Habitat Areas of Particular Concern (HAPC) have been identified as hardbottom, coral and coral reef habitats.

Essential Fish Habitat for species within the project area include brown and pink shrimp, snapper-grouper complex (73 species), Spanish and king mackerel, spiny lobster. Various life stages of some of the managed species found in the project area include larvae, post larvae, juvenile and adult stages of red, gray, schoolmaster, mutton and yellowtail snappers, scamp, speckled hind and gag groupers, white grunt and spiny lobster. Coastal migratory pelagic species identified by the NOAA Fisheries include nurse, bonnethead, lemon, black tip and bull sharks. EFH resources within the project area are not likely to be adversely affected.

3.08 Hazardous, Toxic and Radioactive Waste. The coastline within the project area is located adjacent to predominantly residential, commercial and recreational areas. The areas within the project are high energy littoral zones and the material used for nourishment are composed of particles with large grain sizes that do not normally have contaminants adsorbing to them. The nature of the work involved with the renourishment of beaches is such that contamination by hazardous and toxic wastes is very unlikely. No contamination due to hazardous and toxic waste spills is known to be in the study area.

3.09 Air Quality. Air quality within the project area is good due to the presence of either on or offshore breezes. Dade County is in attainment with the Florida State Air Quality Implementation Plan for all parameters except for the air pollutant ozone. The county is designated as a moderate non-attainment area for ozone.

3.10 Noise. Ambient noise around the project area is typical to that experienced in recreational environments. Noise levels range from low to moderate based on the density of development and recreational usage. The major noise producing sources include breaking surf, beach and nearshore water activities, adjacent residential and commercial areas, and boat and vehicular traffic. These sources are expected to remain at their present noise levels.

3.11 Aesthetic Resources. The project area consists of light sandy beige beaches that contrast strikingly with the deep hues of the panoramic Atlantic Ocean. The eastern foreground consisting of dune vegetation is backdropped by condominium and hotel tropical landscape plantings in many areas. Coconut, sabal, and date palm trees provide vertical human scale transition between the structures and the beachfront. Beachfront plantings of sea oats, dune sunflower, seagrasses, morning glory vines and many other tropical beach plantings provide an aesthetic transition between the remaining dunes and the beach. The area consists of moderate to good aesthetic values with few exceptions throughout the entire project.

3.12 Recreation Resources. Dade County is a heavily populated county on Florida's Atlantic Coast which receives a tremendous volume of tourists, particularly during the winter months. Beaches with access to the general public are heavily used year round. Beaches associated with condominiums, hotels and apartments have more restricted access for the general public, but receive use from the many visitors as well as the general public who walk or jog along the beachfront.

The beach at Bal Harbour has public access and receives heavy use by swimmers and sunbathers. Adjacent to these beaches are many

condominiums and hotels used by long and short term visitors and residents of the area. Other water related activities within the project area include on-shore and offshore fishing, snorkeling, SCUBA diving, windsurfing and recreational boating. Most of the boating activity in the area originates from either Bakers Haulover Inlet or Government Cut. Both offshore fishing and diving utilize the natural and artificial reefs located within and adjacent to the project area. Commercial enterprises along the beach rent beach chairs, cushions, umbrellas, and jet skis. Food vendors can also be found along the beach areas. The revenue generated by beachgoers supports a resurgent Miami Beach business district in the project vicinity.

3.13 Historic Properties. No significant historic properties have been identified on the beach segment proposed for groin rehabilitation.

4.0 ENVIRONMENTAL EFFECTS.

4.01 General Environmental Setting. Completion of the GMs project should result in the maintenance of a stable beach from monument R-27 to R-31.5. Completion of the project will ensure that a beach exists at high tide as well as a protective sand dune system above the supralittoral zone. The GMs will help sustain the existing beach and dune system and promote increased foraging habitat for many small birds, mammals, and reptiles as well as protection from storm waves and tides for residents and infrastructure of the coastline.

4.02 Fish and Wildlife Resources. Retention of sand by the GMs project should improve sea turtle nesting success by reducing erosion along these beach sections. Additionally, as the structures gradually become exposed, their prominence and stability will serve as excellent recruitment habitat for a plethora of encrusting marine algae, invertebrates and associated organisms up through and including the predators of the various phyla. The rate of growth would be gradual and biological stability would ultimately encourage considerable diversity on the rebuilt groins. The effects of these stable structures would likely encourage greater diversity in habitats adjacent to them as well. Many of the organisms mentioned in the affected environment section would be sustained from one renourishment to the next. Of course, with each renourishment, essentially all biological productivity associated with, and occurring on the groin structures would be eliminated. Under existing conditions, the entire area is scoured during moderate wave and weather conditions. The new modified groins would serve in the development of a more stable and diverse community between renourishments.

The inhabitants of the intertidal zone typically possess high fecundity and rapid turnover rates during the summer breeding season. Populations of the mollusk, Donax variabilis, and species of crustaceans, in areas of beach nourishment usually become numerically abundant once again after six months. This resurgence is most likely from littoral transport of larvae from adjacent areas (Mikkelsen 1981). Because of this, long term effects on infaunal invertebrates inhabiting the intertidal zone in the GM area at Bal Harbor is not expected to be significant. The highly visible decapod crustaceans of the Bal Harbour supralittoral zone, such as the ghost crab Ocypode quadrata, mole crab, Emerita talpoida, and the Atlantic fiddler crab, Uca pugilator are all highly motile organisms and readily adapt to unacceptable environmental conditions. Reilly and Bellis (1978, 1983) have concluded that direct burial by beach nourishment activities is not a major mortality source as these crabs are able to actively avoid the nourished area or burrow up through the overburden material, if necessary. Marsh and Turbeville (1981) examined benthic communities near Hallandale Beach, Florida, seven (7) years after a beach nourishment project and concluded that no long term effects were observed for the infaunal benthos. Saloman and Naughton (1984) saw no significant numerical differences in biological communities between beach deposition and non-deposition areas after six (6) weeks following beach fill operations off Panama City, Florida. In summary, no long term adverse effects are expected to organisms in the supralittoral or intertidal zone GM area.

4.03 Threatened or Endangered Species. Following construction of the GMs the T-heads would have the potential to impact sea turtle mobility. Although unlikely, they could prevent and/or possibly discourage adult female turtles from reaching the beach. However, this seems unlikely in view of the amount of area obstructed vs. large open areas available for adult turtles to avoid such obstructions. The T-heads, however, could impede or trap hatchlings leaving the beach for the open ocean. Either situation could result in the take of sea turtles. However, because nests in Dade County are relocated to a hatchery, it is unlikely that any takes would occur. However, a take could occur if a nest/s were not discovered. Nests relocated to the hatchery should preclude takes of hatchlings where the T-head groins would be constructed. Accordingly, it is recommended that where T-head groins are planned for construction and could pose an entrapment threat to sea turtle hatchlings; the eggs of all sea turtle species should be relocated to a hatchery facility; or, control released as far as possible from any T-head groins to reduce the possibility of any hatchling take/s at Bal Harbour. Also, where the T-head groins will be built it is expected that sand will be retained behind the T-heads. Such a formation should preclude hatchling turtles from encountering the T-heads. Furthermore, the T-heads to be constructed will obstruct only a minute area through which adults/hatchlings would transit to reach either

beach/ocean. Finally, the longest T-head on the north side of groin #1 will be angled 10 degrees east toward the ocean. Based on the foregoing, it is expected that the effect on adult sea turtles would be minimal while hatchlings could be affected if adequate sand reserves are not retained behind the groin as expected.

To ensure that the project will have little to no affect on sea turtles, special precautions will be taken to protect nesting sea turtles and emerging hatchlings with prior approval of the U.S. Fish and Wildlife Service. The Corps has consulted with the US Fish and Wildlife Service and their September, 2005 Biological Opinion addresses this and other issues (Appendix C). The Corps will abide by the Opinion's Terms and Conditions. Finally, special precautions will be taken during the construction of, and care in the design specifications to avoid any affect on turtle nesting/emergence/migration. The Environmental Commitments Section (5.00) of this EA contains measures designed to avoid and/or minimize adverse affects on environmental resources.

4.04 Cultural Resources. There would be no impact to cultural resources if the Bal Harbour GMS were not constructed. The kingpile groins themselves are not considered cultural resources. However, a cultural resource survey was conducted for the project. Based on the survey a determination has been made that the project will have no effect on any sites listed, or eligible for listing in the National Register of Historic Places. Consultation with the Florida State Historic Preservation Officer has been completed.

4.05 Water Quality. The project is not expected to have any affect on water quality as all Groin area work may be done in the dry after the beach is renourished. However, if the project is to be constructed in an eroded state, a water quality certificate will be obtained. A Section 404(b)(1) evaluation has already been prepared should the latter eventuality occur.

4.06 Essential Fish Habitat. The recommended plan of improvement along the Bal Harbour shoreline consists of three primary elements: removal of the five existing groins, reconstructing these five groins in an improved configuration, and continued periodic beach renourishment. For simplicity, the groins will be numbered 1 through 5 proceeding from north to south along the Bal Harbour shoreline. The removal and reconstruction of the groins will likely be completed in the dry after the beach is renourished which will eliminate the possibility of essential fish habitat effects. Nevertheless, coordination of this EA constitutes initial consultation with the NMFS under provisions of the Magnuson-Stevens Fishery Conservation and Management Act relative to Essential Fish Habitat (EFH) effects resulting from the work described in the EA. Based on

analyses discussed in this EA and (USACE, 2004), acute and cumulative effects on EFH resulting from the addition of the proposed project features are expected to be negligible.

4.07 Hazardous and Toxic Wastes. The project will not involve placement, use or storage of hazardous and toxic materials in or near the project area. All wastes and refuse generated by the project will be properly stored and removed when the project activities are completed. However, construction of the GMs should at least reduce the possibility that contaminants from upland facilities adjacent to the project area would have any opportunity to affect the beach area.

4.08 Aesthetic Resources. The project will restore beaches which have been severely eroded by high tides, storm generated waves, and high winds. Restored beach and dune areas will help restore the natural appearance and thus the aesthetic resources of the Bal Harbour beaches. Groins will be buried most of the time.

4.09 Acoustical Quality. The immediate project area may experience an increase in noise levels during the beach fill and GMs construction phase. Construction equipment will be properly maintained in order to minimize the effects of noise. The elevated noise levels will be localized in nature and will not persist because of the brief, temporary nature of the construction activity.

4.10 Air Quality. There will be no long term accumulation of particulates in the project area because offshore sea breezes are likely to disperse pollutants away from the barrier island and the construction activity is brief and temporary in nature. No air quality permits are required for this permit.

4.11 Recreation. Once the GMs are complete, the beach will retain a larger sand berm/beach over a longer time period which will provide more space for both active and passive saltwater recreation activities. A wider sand berm along the beach will provide for improved family oriented recreation. The beach park areas will be maintained as the structures will allow the migration of sand to the southern project area.

5.00 ENVIRONMENTAL COMMITMENTS. The U.S. Army Corps of Engineers and their contractors commit to avoiding, minimizing, or mitigating for adverse effects during construction activities by including the following commitments in contract specifications:

(1) Inform contractor personnel of the potential presence of sea turtles and manatees in the nearshore work areas, their endangered status, the need for precautionary measures, and the

Endangered Species Act prohibition on taking and/or harassing any of these species.

(2) If work is done from a vessel in the nearshore area, then during transport to/from the nearshore open water work area, personnel will take precautions to avoid collisions with sea turtles, manatees and whales. Vessels transporting personnel between the nearshore construction areas and the vessel/barges port of origin shall follow routes of deep water whenever possible. A lookout will be posted on all support vessels operating offshore to minimize potential collisions with sea turtles and whales.

(3) Depending on the project construction schedule the beach will be visually inspected each morning as required by the FWS. Any Green/Leatherback sea turtle nest found within an area where a GM will occur will be relocated between sunrise and 09:00 a.m. to an adjacent beach unaffected by the work or to a hatchery. Nest surveys and relocations will be conducted by MDPD daily by personnel with prior experience and training in these procedures and with a valid Florida Department of Environmental Protection permit. Nesting surveys shall be initiated 65 days prior to groin construction activities or by dates provided in a FWS BO, whichever is later. Nesting surveys shall continue through the end of the project or as required in the BO. If turtles nest in areas where they may be affected by construction activities, eggs shall be relocated according to measures described in the BO.

(4) If any Loggerhead, Green or Leatherback nest is relocated to a safer beach location, a report describing the actions taken, description of nest location, and names and qualifications of personnel involved in the nest survey and relocation will be submitted to the U.S. Fish and Wildlife Service (FWS), Vero Beach Field Office within 60 days after completion of the beach renourishment project.

(5) Any incident involving the death or injury of any endangered or threatened species shall be immediately reported to the U.S. Army Corps of Engineers, National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the Florida Department of Environmental Protection for investigation to determine the most appropriate course of action.

(6) If the GM's are constructed when the beach is eroded, turbidity shall be monitored at the rock placement area. Should monitoring reveal turbidity levels above State standards (> 29 NTU's above background) construction activities will be immediately suspended until turbidity levels return to within acceptable standards as specified in the State water quality permit.

(7) Contractors will abide by all Terms & Conditions (T&Cs) specified in the U. S. Fish and Wildlife Service's September 2005 Biological Opinion in Appendix C of this document.

The U.S. Army Corps of Engineers and contractors commit to avoiding and/or minimizing adverse affects to environmental resources during construction activities and will consider mitigating and/or retrofitting structures, or instituting project operational features/adjustments, such as monitoring turtle hatching activities, hatchery operation, etc. if important environmental resources are seriously affected by the completed work. Contractor personnel will be informed of the potential presence of sea turtles, manatees near beach work areas, their endangered status, the need for precautionary measures, and the Endangered Species Act prohibition on taking and/or harassing any of these species.

6.00 COMPLIANCE WITH ENVIRONMENTAL STATUTES. The proposed project will comply with all Federal and State environmental protection statutes, Executive Orders and other environmental requirements applicable to this project, its location and all regulated activities associated with its completion.

6.01 National Environmental Policy Act of 1969, as amended. Environmental information on this authorized project has been compiled and the interested public has been notified that this Environmental Assessment has been prepared in accordance with the National Environmental Policy Act.

6.02 Endangered Species Act of 1973, as amended. This project has been fully coordinated with the U. S. Fish and Wildlife Service. (Biological Opinion attached in Appendix C). The Corps will abide by the Terms and Conditions in the Service's September 2005 Biological Opinion. NOTE: If work is performed from vessels/barges (when the project is in an eroded state), provisions of the National Marine Fisheries Service's 1997 Regional Biological Opinion will be followed.

6.03 Fish and Wildlife Coordination Act of 1958, as amended. The project has been coordinated with the U.S. Fish and Wildlife Service. U.S. Fish and Wildlife Service personnel indicated that the 1997 CAR, prepared for the Bal Harbour Beach Erosion Control Project, remains an accurate description of fish and wildlife resources in the project area.

6.04 National Historic Preservation Act of 1966, as amended. The Archeology and Historic Preservation Act (PL 93-291), and Executive Order 11593) Archival research, field investigations, and consultation with the Florida State Historic Preservation Officer (SHPO), were completed in accordance with the National

Historic Preservation Act, as amended; the Archeological and Historic Preservation Act, as amended and Executive Order 11593. Refer to Section 4.04 for the results of SHPO consultation. The project will not affect historic properties included in or eligible for inclusion in the National Register of Historic places. The project is in compliance with each of these Federal laws.

6.05 Clean Water Act of 1972, as amended. All State water quality standards will be met. A Section 404(b) Evaluation was prepared and is included in this report as Appendix B. Reference is made to the State Clearinghouse letter of May 27, 2004 provided in Appendix C.

6.06 Clean Air Act of 1972, as amended. No permits will be required for this project. Full compliance will be achieved with receipt of comments on the EA from the U.S. Environmental Protection Agency.

6.07 Coastal Zone Management Act of 1972, as amended. The study is in partial compliance at this time. Full compliance will be achieved with receipt of comments from the State Clearinghouse. A federal consistency determination is included in this report as Appendix A. Appendix C contains preliminary State comments.

6.08 Marine Mammal Protection Act of 1972, as amended. Incorporation of the safeguards used to protect threatened or endangered species during vessel operations will also protect any marine mammals in the area; therefore, this project is in compliance with the Act.

6.09 E.O. 12898, Environmental Justice. The proposed action would not impact human health and would not substantially impact the environment. The impacts would not be disproportionately high towards minority or low-income populations. We are not aware of any use of the proposed project area for subsistence consumption of fish and wildlife. The proposed action would not impact such subsistence consumption if any is associated with the project area.

6.10 Magnuson-Stevens Fishery Conservation and Management Act. Based on analyses discussed in this EA acute and cumulative effects on EFH resulting from the addition of the proposed project elements are expected to be negligible. This EA was coordinated with the NMFS and the proposed project modifications are in compliance with the Act.

7.00 COORDINATION and PUBLIC INVOLVEMENT. The planning of this project has been coordinated with the following Federal and State agencies: U.S. Fish and Wildlife Service, National Marine

Fisheries Service, U.S. Environmental Protection Agency, Florida State Historic Preservation Officer (SHPO), and Florida Department of Environmental Protection. In addition, the proposed project has been coordinated with several local and regional planning agencies. A scoping letter circulated in April 2004 generally discussed a combination of alternatives which were being evaluated to control the erosion and stabilize the subject beach. A copy of the letter and the original alternative plans is in Appendix D.

8.00 LIST OF PREPARERS. This EA was prepared by the following U.S. Army Corps of Engineers personnel:

William J. Lang, Biologist and principal author
Grady Caulk, Archeologist

9.00 LIST OF REVIEWERS. This EA was reviewed by:

Mr. James McAdams, Chief, Atlantic Coast Section

10.00 REFERENCES.

References are available upon request.

11.00 APPENDICES.

Sub-Appendix A - Florida Coastal Zone Management Program
Federal Consistency Evaluation
Sub-Appendix B - 404(B)(1) EVALUATION REPORT
Sub-Appendix C - U. S. Fish & Wildlife Service
Endangered Species Consultation
September 2005
Service Log No.: 4-1-05-12842
Sub-Appendix D - Pertinent Correspondence and Responses to
Comments Received from circulation of the
April 2004 Scoping Letter and June 2005
Preliminary Finding of No Significant
Impact & Draft Environmental Assessment

SUB-Appendix A

FLORIDA COASTAL ZONE MANAGEMENT PROGRAM
FEDERAL CONSISTENCY EVALUATION PROCEDURES

BAL HARBOR SHORE PROTECTION PROJECT (SPP),
DADE COUNTY, FLORIDA
PROPOSED GROIN MODIFICATIONS (GMs)
BETWEEN BEACH MONUMENTS R-27 AND R-31.5

SEPTEMBER 2005

SUB-Appendix A

FLORIDA COASTAL ZONE MANAGEMENT PROGRAM
FEDERAL CONSISTENCY EVALUATION PROCEDURES

BAL HARBOR SHORE PROTECTION PROJECT (SPP),
DADE COUNTY, FLORIDA
PROPOSED GROIN MODIFICATIONS (GMs)
BETWEEN BEACH MONUMENTS R-27 AND R-31.5

SEPTEMBER 2005

1. Chapter 161, Beach and Shore Preservation.

The intent of the coastal construction permit program established by this chapter is to regulate construction projects located seaward of the line of mean high water and what might have an effect on natural shoreline processes.

Response: To improve shore protection between the south jetty and R-31.5, the Corps initiated the preparation of a Detailed Design Report (DDR) to evaluate a structural design to improve project performance in the subject area. The proposed GMs would improve the efficiency of the project's sand retention capabilities and reduce beach front losses due to continuous erosion to prevent/reduce periodic damages and potential risk to life, health, and property in the developed lands adjacent to the beach.

2. Chapters 186 and 187, State and Regional Planning.

These chapters establish the State Comprehensive Plan which sets goals that articulate a strategic vision of the State's future. Its purpose is to define in a broad sense, goals, and policies that provide decision-makers directions for the future and provide long-range guidance for an orderly social, economic and physical growth.

Response: This proposed project has been coordinated with appropriate Federal, State, and local governmental agencies. The project meets the primary goal of the State Comprehensive Plan for beaches through stabilization and preservation of a protective beach. As this project would increase recreational opportunities in the area, it is also considered advantageous to the local economy and would provide for sustained economic growth.

3. Chapter 252, Disaster Preparation, Response and Mitigation.

This chapter creates a state emergency management agency, with the authority to provide for the common defense; to protect public peace, health and safety; and to preserve the lives and property of the people of Florida.

Response: The proposed improved beach stabilization design of the structures will help protect the beach from further severe erosion and reduce potential property and infrastructure damage resulting from storms along the Atlantic coast. Therefore, this project would be consistent with the efforts of the Division of Emergency Management.

4. Chapter 253, State Lands.

This chapter governs the management of submerged state lands and resources within state lands. This includes archeological and historical resources; water resources; fish and wildlife resources; beaches and dunes; submerged grass beds and other benthic communities; swamps, marshes and other wetlands; mineral resources; unique natural resources; submerged lands; spoil islands; and artificial reefs.

Response: The proposed GMs would prolong a wider recreational beach and provide additional necessary and more cost-effective storm protection for development and infrastructure along the Bal Harbour shoreline. Except for the beach itself, natural resources will be unaffected by the groins as these would be constructed and encapsulated within the template of a restored upland beach. As the structures are gradually exposed, they will effectively stabilize and maintain this usually highly erosive portion of the beach and provide a more stable environment which will better sustain marine resources. Historical and archeological resources will be addressed in Chapter 267, Historic Preservation. This project will therefore comply with the intent of this chapter.

5. Chapters 253, 259, 260, and 375, Land Acquisition.

This chapter authorizes the state to acquire land to protect environmentally sensitive areas.

Response: Bal Harbour Beach has numerous public access points from adjacent parking areas, many of which will be available during construction of the beach stabilization project. Therefore, this chapter does not apply.

6. Chapter 258, State Parks and Aquatic Preserves.

This chapter authorizes the state to manage state parks and preserves. Consistency with this statute would include consideration of projects that would directly or indirectly adversely impact park property, natural resources, park programs, management or operations.

Response: The shoreline along Bal Harbour's Beach is fully developed with oceanfront hotels and condominiums, however, the forebeach supports a broad band (apx. 50' wide) of natural dune vegetation which helps to maintain and stabilize the project beach. The GMs are designed to retain as well as bypass sand to downcurrent beaches, thus providing protection for this natural buffer zone from storm generated wave energy as well as have a positive influence on recreational opportunities in the beach area. The addition of the GMs would support the retention of the natural vegetation and support further dune development which would provide additional refuge and foraging areas for small mammals and reptiles. Therefore, the project is consistent with the intent of this chapter.

7. Chapter 267, Historic Preservation.

This chapter establishes the procedures for implementing the Florida Historic Resources Act responsibilities.

Response: This project has been coordinated with the State Historic Preservation Officer (SHPO). Historic Property investigations were done in the project area and no historic properties are known to exist in the construction area. The SHPO is expected to concur with the Corps determination that the proposed project will not adversely affect any significant or historic properties. The project will be consistent with the goals of this chapter.

8. Chapter 288, Economic Development and Tourism.

This chapter directs the state to provide guidance and promotion of beneficial development through encouraging economic diversification and promoting tourism.

Response: The proposed GMs would better protect infrastructure and improve recreational potential along Bal Harbour's Beach thus meeting the goals of this chapter.

9. Chapters 334 and 339, Public Transportation.

This chapter authorizes the planning and development of a safe and efficient transportation system.

Response: No long-term adverse impacts to public transportation systems are anticipated by this project.

10. Chapter 370, Saltwater Living Resources.

This chapter directs the state to preserve, manage and protect the marine, crustacean, shell and anadromous fishery resources in state waters; to protect and enhance the marine and estuarine environment; to regulate fishermen and vessels of the state engaged in the taking of such resources within or without state waters; to issue licenses for the taking and processing products of fisheries; to secure and maintain statistical records of the catch of each such species; and, to conduct scientific, economic, and other studies of research.

Response: As addressed in item 4., above, none of these resources will be affected by project construction. Furthermore, once the structures are exposed, measures will be in place to effectively preclude impacts to manatees and sea turtles which may be foraging/reproducing in the area of exposed structures.

11. Chapter 372, Living Land and Freshwater Resources.

This chapter establishes the Game and Freshwater Fish Commission and directs it to manage freshwater aquatic life and wild animal life and their habitat to perpetuate a diversity of species with densities and distributions which provide sustained ecological, recreational, scientific, educational, aesthetic, and economic benefits.

Response: The proposed GMs have been coordinated with the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) for compliance with Section 7 of the Endangered Species Act. The NMFS indicated that the project's location was not within its purview. The FWS concurred with the Corps' determination that the project is likely to adversely affect loggerhead, green and leatherback sea turtles, but is not likely to adversely affect the West Indian manatee. Further explanation is provided by documents included in Appendix B (Fish and Wildlife Biological Opinion) and Appendix D (Relevant Correspondence) of this report. The GMs whether exposed, inundated or covered by beach will provide additional forage habitat for terrestrial/aquatic organisms, provide refuge opportunities for small species and promote biodiversity in the project area. This project complies with the goals of this chapter.

12. Chapter 373, Water Resources.

This chapter provides the authority to regulate the withdraw, diversion, storage, and consumption of water.

Response: Beach structure construction within the restored beach may involve shallow groundwater withdraw to facilitate the work. The water would be redirected and released on the beach above where work would be done resulting in no contamination to the water or runoff to the ocean. This project complies with the goals of this chapter.

13. Chapter 376, Pollutant Spill Prevention and Control.

This chapter regulates the transfer, storage, and transportation of pollutants and the cleanup of pollutant discharges.

Response: This project does not involve transportation of any toxic substances. All precautions will be taken during the construction phase to assure that no hydrocarbons or other toxins are expelled into the environment by dredging or earthmoving equipment.

14. Chapter 377, Oil and Gas Exploration and Production.

This chapter authorizes the regulation of all phases of exploration, drilling, and production of oil, gas, and other petroleum products.

Response: This project does not involve the exploration, drilling or production of gas, oil or petroleum product and therefore does not apply.

15. Chapter 380, Environmental Land and Water Management.

This chapter establishes criteria and procedures to assure that local land development decisions consider the regional impact nature of proposed large-scale development.

Response: The proposed GMs are unlikely to have any regional impact on resources found along the southeastern Atlantic coast of Florida as the erosion at the project's location is severely acute compared to typical regional beaches. The upland area is already fully developed. The project is consistent with the established goals of this chapter.

16. Chapter 388, Arthropod Control.

This chapter provides for a comprehensive approach for abatement or suppression of mosquitoes and other pest arthropods within the state.

Response: **The project would not further the propagation of mosquitoes or other pest arthropods.**

17. Chapter 403, Environmental Control.

This chapter authorizes the regulation of pollution of the air and waters of the state by the Florida Department of Environmental Regulation.

Response: **Air pollution problems are expected to be insignificant due to strong prevailing coastal winds. Close project monitoring will be done to assure water is not polluted if dewatering is necessary to construct the GMs. Monitoring will also assure compliance with all applicable water quality standards. A project Water Quality Certificate (WQC) may be applied for during the Plans and Specification phase of planning. Complete adherence to WQC conditions will assure full compliance with the intent of this chapter.**

18. Chapter 582, Soil and Water Conservation.

This chapter establishes policy for the conservation of the state soil and water through the Department of Agriculture. Land use policies will be evaluated in terms of their tendency to cause or contribute to soil erosion or to conserve, develop, and utilize soil and water resources both onsite or in adjoining properties affected by the project. Particular attention will be given to the project on or near agricultural lands.

Response: **The project is not located near or on any agricultural lands. The proposed project is designed to stabilize and protect a portion of public beach prone to severe acute erosion. Once stabilized the beach will offer both recreational opportunities as well as sustained protection for both property and human health against storm generated wave energy.**

SUB-Appendix B
404(B)(1) EVALUATION REPORT

Bal Harbour BEACH EROSION CONTROL PROJECT
PROPOSED GROIN MODIFICATIONS (GMs)
BETWEEN BEACH MONUMENTS R-27 AND R-31.5

SEPTEMBER 2005

SUB-Appendix B
404(B)(1) EVALUATION REPORT

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SEPTEMBER 2005

1.01 Project Description. The Bal Harbour shoreline plan consists of three primary elements; removal of the five existing groins, reconstructing these five groins in an improved configuration, and continued periodic beach renourishment. The groins are numbered 1 through 5 from north to south.

a. Location. The project is located on the southeast Florida coast within Dade County. Bal Harbour is a coastal municipality in Dade County that has 0.85 mile of shoreline.

b. General Description. In conjunction with groin construction, igneous and/or metamorphic rock will be placed in existing surf-zone waters of the Atlantic Ocean.

c. Authority and Purpose. The Beach Erosion Control and Hurricane Protection (BEC & HP) Project for Dade County, Florida was authorized by the Flood Control Act of 1968 (see figure 1, site map – scoping map). In addition, Section 69 of the 1974 Water Resources Act (P.L. 93-251 dated 7 march 1974) included the initial construction by non-federal interests of the 0.85 mile segment along Bal Harbour Village, immediately south of Bakers Haulover Inlet.

d. General Description of Dredged or Fill Material.

(1) General characteristics of material. The fill will contain igneous and/or metamorphic rock.

(2) Quantity of material. Approximately: The total quantities of stone required to construct alternative S-3 are as follows. The quantity of 1.2-ton armor stone is 6,252 tons, quantity of foundation mattresses is 1,759 tons (= 2,870 sq yds.), and quantity of geotextile fabric is 3,032 sq yds.

(3) Source of material. Upland borrow and excavation sites.

e. Description of the Proposed Discharge Site.

(1) Location. Fill will be placed in the surf-zone of the Atlantic Ocean along the Bal Harbour Beach.

(2) Size. Apx 2.5 ton stone.

(3) Type of site. Coastal beach and surf-zone.

(4) Type of habitat. Marine littoral zone characterized by open subtidal salt water.

(5) Timing and duration of discharge. Any time of year during construction.

f. Description of Disposal Method. High capacity earth moving equipment such as bulldozers, dump trucks, front-end loaders, barges and cranes would be used to accurately place the rock according to specific plans.

1.02 Factual Determinations.

a. Physical Substrate Determinations.

(1) Substrate elevation and slope. 0-3 meters NGVD; 0-2 percent slope.

(2) Sediment type. Alluvial sands.

(3) Dredged/fill material movement. Rock material once placed should remain stationary.

(4) Physical effects on benthos. All benthos at groin sites will be buried; other benthos will be unaffected.

b. Water Circulation, Fluctuation, and Salinity Determination.

(1) Water column effects. Temporary turbidity may occur during construction and storm events but is not normally a problem..

(2) Current patterns and circulation. Littoral currents and 2 tidal cycles per day.

(3) Normal water level fluctuations and salinity gradients. No effect and salinity gradients will be unaffected.

c. Suspended Particulate/Turbidity Determinations.

(1) Expected changes in suspended particulate and turbidity levels in the vicinity of the disposal site. There may be temporary increases in these parameters during construction.

(2) Effects on chemical and physical properties of the water column.

- (a) Light penetration. Reduced during elevated turbidities.
- (b) Dissolved oxygen. No effect.
- (c) Toxic metals, organics, and pathogens. No effect.
- (d) Aesthetics. Groins will limit or enhance aesthetic appreciation depending on viewer's vantage point.

(3) Effects on biota.

- (a) Primary productivity and photosynthesis. At fill sites aquatic and wetland vegetation will be replaced by upland plants growing on the levees.
- (b) Suspension/filter feeders. Eliminated in open water fill sites. Fill substrate below the water line will be colonized.
- (c) Sight feeders. Aquatic forms eliminated at fill sites with no effect elsewhere.

d. Contaminant Determinations. No contaminants known.

(1) Endangered and threatened species. Threatened/endangered turtles seasonally occur within the project area. Depending on the configuration of the beach in response to T-head alignment, adult and hatchling turtle access/egress could be affected.

e. Proposed Disposal Site Determinations.

- (1) Mixing zone determination. Not applicable.
- (2) Determination of compliance with applicable water quality standards. The clean fill will not result in violation of any standards.
- (3) Potential effects on human use characteristics.
 - (a) Municipal and private water supplies. No effect.
 - (b) Recreational and commercial fisheries. Improved access/success on recreational fishing and no significant effect on commercial.
 - (c) Water related recreation. Additional recreational opportunities, such as fishing, skin diving, and similar activities would be available on and in the immediate vicinity of

exposed groins however, considerable caution must be used to avoid personal bodily impact on\with the structures.

(d) Aesthetics. Groins, when exposed, will restrict or enhance aesthetics depending on the viewer's vantage point.

(e) Parks, national and historic monuments, national seashores, wilderness areas, research sites, and similar preserves. None present.

f. Determination of Cumulative Effects on the Aquatic Ecosystem. There will be no major acute or cumulative effects that result in impairments/benefits to water quality.

1.03 Findings of Compliance or Non-compliance with the Restrictions on Discharge.

a. No significant adaptations of the guidelines were made relative to this evaluation.

b. No practicable alternative exists, if work is done when the beach is in it's cyclical eroded state, which meets study objectives that does not involve discharge of fill into waters of the United States.

c. The placement of fill materials will not cause or contribute to, after consideration of disposal site dilution and dispersion, violations of any applicable Commonwealth water quality standards. The discharge operation will not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

d. The placement of fill material will not jeopardize the continued existence of any species listed as threatened or endangered or result in the likelihood of destruction or adverse modification of any critical habitat as specified by the Endangered Species Act of 1973, as amended.

e. The placement of fill materials will not result in significant adverse effects on human health and welfare, municipal and private water supplies, recreational and commercial fishing, plankton, fish, shellfish, wildlife, wetlands and special aquatic sites. The life stages of aquatic species and other wildlife will not be adversely affected. Significant adverse effects on aquatic ecosystem diversity; productivity and stability; and recreational, aesthetics, and economic values will not occur.

f. Appropriate steps to minimize potential adverse impacts of the discharge on aquatic systems included selecting the plan with the least real impact on the aquatic environment. Additionally, unavoidable impacts to the aquatic system will be mitigated by creating diverse open water habitats of greater value in the immediate project vicinity.

g. On the basis of the guidelines, the proposed disposal sites for the discharge of fill materials are specified as complying with the requirements of these guidelines.

SUB-Appendix C

U. S. Fish & Wildlife Service
Endangered Species Consultation
September 2005
Service Log No.: 4-1-05-12842

BAL HARBOR SHORE PROTECTION PROJECT,
DADE COUNTY, FLORIDA
PROPOSED GROIN MODIFICATIONS (GMs)
BETWEEN BEACH MONUMENTS R-27 AND R-31.5

SEPTEMBER 2005



United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960



September 23, 2005

Colonel Robert M. Carpenter
District Engineer
U.S. Army Corps of Engineers
701 San Marco Boulevard, Room 372
Jacksonville, Florida 32207-8175

Service Log No.: 4-1-05-12842
Dated: February 3, 2005
Project: Bal Harbour T-groin reconstruction
Sponsor: Miami-Dade County Board of Commissioners
County: Miami-Dade

Dear Colonel Carpenter:

This document transmits the Fish and Wildlife Service's (Service) biological opinion based on our review of the proposed removal and reconstruction of five existing groins on Bal Harbour Beach, Miami-Dade County, Florida, and its effects on the threatened loggerhead sea turtle (*Caretta caretta*), the endangered leatherback sea turtle (*Dermochelys coriacea*), the endangered green sea turtle (*Chelonia mydas*), the endangered hawksbill sea turtle (*Eretmochelys imbricata*), the endangered Kemp's ridley sea turtle (*Lepidochelys kempii*), and the endangered West Indian manatee (*Trichechus manatus*). This biological opinion is provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Your February 3, 2005, request for formal consultation was received on February 4, 2005.

We concur with your February 3, 2005, determination that the proposed action may affect, but is not likely to adversely affect, the West Indian manatee since the *Standard Manatee Construction Conditions* will be implemented. The presence of manatees will be monitored daily and every precaution (including the shut-down of operations if appropriate) will be taken to avoid any effects on the species.

We concur with your February 24, 2005, determination that the proposed action is likely to adversely affect the loggerhead, green, and leatherback sea turtles. Given that the hawksbill and Kemp's ridley sea turtles occur offshore from the project area and could potentially nest within the project area, we will also address these two species in our biological opinion.

This biological opinion is based on information provided in the U.S. Army Corps of Engineers' (Corps) biological assessments; the Corps' *Preliminary Finding of No Significant Impact and Draft Environmental Assessment for Proposed Modifications to 5 Groins (GMs) Between Beach Monuments R-27 and R-31.5* dated June 2005; Miami-Dade County Park and Recreation



Department (MDPR); the Florida Fish and Wildlife Conservation Commission (FWC); the Florida Department of Environmental Protection (DEP), Bureau of Beaches and Coastal Systems; telephone conversations and email correspondence with the Corps; field investigations; and other sources of information. A complete administrative record of this consultation is on file in this office.

CONSULTATION HISTORY

On April 21, 2004, the Service received a letter from the Corps dated April 9, 2004, in which the Corps announced it will evaluate removal and replacement of five existing groins.

On February 4, 2005, the Service received a letter from the Corps dated February 3, 2005, in which the Corps requested initiation of consultation and determined that the proposed action “may affect but is not likely to adversely affect” manatees or loggerhead, green, and leatherback sea turtles. A biological assessment, preliminary finding of no significant impact, and environmental assessment for the project were enclosed.

During a phone conversation on February 9, 2005, the Service recommended that the Corps revise its determination for the loggerhead, green, and leatherback sea turtles.

On February 25, 2005, the Service received a letter from the Corps dated February 24, 2005, in which the Corps revised its determination for the loggerhead, green, and leatherback sea turtles to “may affect likely to adversely affect.” A revised biological assessment was also enclosed.

On July 5, 2005, the Service received a letter from the Corps dated June 30, 2005, in which the Corps announced that it had prepared an environmental assessment and preliminary finding of no significant impact to evaluate the project.

On July 15, 2005, the Service emailed the Corps requesting clarification on whether or not the proposed action for this specific consultation included beach nourishment. The Service also requested additional information regarding project design, location, and project impacts to sea turtles.

On July 29, 2005, the Service spoke with the Corps regarding information requested in our July 15, 2005, email. The Corps stated that the groin project would not include any beach nourishment. After this phone conversation, the Service emailed the Corps with an expanded list of information needs, including sea turtle nesting data within the project area, and a draft of the proposed action for the Corps to review and comment on.

On August 10, 2005, and on August 12, 2005, the Corps sent emails to the Service in response to our July 15, 2005, and July 29, 2005, email requests for information. The Corps confirmed that groin construction is independent of beach construction, provided sea turtle nesting data specific to the project area, and agreed that green and leatherback nests would be left in situ and only loggerhead sea turtle nests would be relocated.

On August 19, 2005, the Service sent an email to the Corps requesting more information about the depth of sand to be placed over the groins after they are reconstructed and other details. The Service also included draft reasonable and prudent measures, and terms and conditions, that are likely to be included in the biological opinion.

On August 22, 2005, the Corps sent an email response to our August 19, 2005, email, which provided more details on groin construction and a figure showing R monuments.

On August 29, 2005, MDPR sent an email to the Service with the most recent 2005 sea turtle nesting data available for the project area.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

Proposed Action

The project is located along the Bal Harbour shoreline between beach monuments R-27 and R-31.5 (Figure 1). This stretch of beach is approximately 0.85 mile long. The Bal Harbour beach experiences higher erosion rates than other Miami-Dade County beaches. The region along the northern 2,000 feet of Bal Harbour is the most rapidly eroding portion of the project. Material is transported out of this area in both directions, with a large percentage of losses due to sediment transport northward around the jetty and into the inlet.

It has been determined that deterioration of the existing groin field in this area is the main cause of an increase in beach erosion in the project site. This project involves removal of the five existing groins and reconstruction of five rubble-mound groins in an improved configuration. Any associated beach construction and renourishment will be handled under separate consultation with the Service. This project only addresses groin removal and reconstruction, as described below. The purpose of this project is to better stabilize Bal Harbour's shoreline between periodic beach renourishments. It is expected that once the new groin system is in place, the beach will be more stable, retain sand for longer periods, and increase the time between beach renourishments.

Groins are numbered 1 through 5 from north to south along the Bal Harbour shoreline (Figure 2). Five king-pile groins were constructed along the Bal Harbour shoreline prior to the construction of the Federal beach renourishment project in 1975. These groins have deteriorated over the years. They are currently ineffective and will be removed. Removal will consist of extracting the concrete piles and excavating any of the horizontal panels between the piles that might remain. Removal of each groin will extend from the seaward tip of each structure landward to the vegetation line. No disturbance of the existing beach vegetation will be allowed during removal or reconstruction of the groins.

Little information is available on the design of the existing piles, particularly the depth of embedment. Most of the king piles remain buried in the beach fill, and the top elevations of

those piles are not known. Therefore, one of two methods of construction will be used, depending on the practicality of removing the piles. The piles will be removed from the vegetation line to the seaward end of each structure if possible, but piles may be cut if the depth of embedment is such that pile extraction is not reasonably practical. The piles which will be covered by new groin construction will be cut at elevation +1 foot mean low water (MLW), and the piles which fall outside of the footprint of the new rubble groins will be cut at elevation -5 feet MLW. The deeper cut-off elevation for piles outside of the footprint is required for safety, environmental, and aesthetic reasons.

The required depths for removal of the existing rubble and concrete panels were determined using similar considerations. For areas within the footprint of the new rubble-mound groins, rubble and panels must be excavated to the base elevation of the foundation, -3 feet MLW. For all areas outside of the footprint of new groin construction, these materials must be excavated to a minimum depth of -5 feet MLW.

Following removal of the five king pile groins, groins 1, 2, 3, and 5 will be rebuilt along the same shore-perpendicular alignments using a rubble-mound design. In order to achieve a more uniform spacing throughout the groin field, groin 4 will be reconstructed 100 feet to the south of its present location. By relocating groin 4 in this manner, an even spacing of about 800 feet will be achieved between each of the five groins. The landward limit of construction for each of the five rebuilt groins is the vegetation line, located between 80 and 110 feet seaward of the Erosion Control Line. All five rebuilt groins will use the same rubble-mound design, which is described below.

In order to better stabilize this reach of the Bal Harbour shoreline, groins 1 and 2 will be reconstructed along their present alignments to the post-nourishment mean high water (MHW) line, and T-heads will be added to the seaward ends of both structures to reduce the losses of sediment from this reach of shoreline (Figure 2). Three of the four T-segments on groins 1 and 2 will extend 25 feet outward from the centerline of each structure. Both T segments on groin 2 and the south T segment on groin 1 will be oriented roughly shore-parallel. The north T segment on groin 1 will be oriented 6 degrees to the east of shore-parallel, and will extend outward 50 feet from the structure's centerline. The orientations of all T-head segments were chosen to lie perpendicular to the predominant direction of incoming wave energy for maximum effectiveness. Groins 1, 2, and 3 will be rebuilt to the same seaward limit as the original kingpile structures. Groins 4 and 5 will be shorter than the original structures.

Groins 3, 4, and 5 will be reconstructed without the T-head segments (Figure 2). As an added measure to prevent downdrift erosion caused by excessive impoundment of sand behind the structures, groins 4 and 5 will be tapered in length to allow increasing amounts of bypassing near the southern limit of the project. The lengths of each groin to be removed and rebuilt are shown in Table 1.

The cross-section of each groin will be identical (Figure 3). The T-sections on groins 1 and 2 will also be constructed using the same design cross-section. Armor stone size will be 1.2 tons, corresponding to an average stone size of about 2.5 feet. Armor stone density will not be less

than 165 pounds per cubic foot. The crest elevation will be 4 feet MLW, and crest width will be 7.5 feet. The foundation of each groin will be constructed at -3 feet MLW, which coincides with the maximum expected depth of scour around the structures. A marine mattress bedding layer 1 foot thick will be constructed under the armor layer, and no intermediate or core stone will be used. The foundation will consist of graded bedding stone contained within marine-grade mesh mattresses, and the mattresses will extend 5 feet beyond the limits of the armor stone for scour protection. Woven geotextile fabric will be placed under the foundation mattresses.

The total quantities of stone required to construct this project include 6,252 tons of 1.2-ton armor stone; 1,759 tons (2,870 square yards) of foundation mattresses; and 3,032 square yards of geotextile fabric. The total volume of excavation is 4,500 cubic yards.

Groins will be constructed either before or after beach renourishment. If the groins are constructed right after a beach renourishment event, 5 feet of sand will cover the crest of each groin, and the beach berm will be at +9 feet MLW. No portion of the groins will protrude above the berm if the groins are constructed within a recently restored beach, except for groin 1, which will be oriented 6 degrees to the east of shore-parallel. Because of its angle, groin 1 will protrude from the beach slope and be more exposed than the short T-heads built parallel to the shore. As the beach erodes over time, distal portions of the groin stems as well as the T-heads will also become exposed.

Only sand displaced during groin construction will be placed on top of the groins. No new sand will be brought in for this project.

Removal of the five existing king pile groins and reconstruction of the five modified groins will be accomplished in one or two different ways. The first method involves removing the existing structures and constructing new groins using a combination of land-based and barge-based construction while the beach is in a fully-eroded condition prior to the next beach renourishment. Construction materials would be transported to the site and placed by barge-mounted equipment, reducing the area needed for stockpiling materials along the Bal Harbour shoreline. Some land-based equipment and stockpiling of materials would still be required to construct the upland portions of each of the five groins. Offshore operations could be conducted only during periods of calm weather.

The second method involves removing the existing structures and constructing new groins from land immediately following the next beach renourishment. Since each of the five groins extends to a maximum seaward distance of the post-renourishment MHW line, construction could be conducted entirely on land if the groin rehabilitation followed the next beach renourishment. Excavation across the 240-foot wide berm would be required. All materials and equipment would be stockpiled on site, with staging and storage areas established on the upper beach. This method of construction would be much less dependent on weather than the barge-based construction method. Access points are available at the inlet and at 96th Street in Bal Harbour.

The contractor will choose one construction method or a combination of both methods. For example, it is possible that the contractor would remove the existing king pile groins while the

beach is in the fully eroded, pre-renourishment condition, then construct the new structures after placement of the renourished beach. Heavy equipment is likely to include back-hoes, bulldozers, cranes, pumps, assorted hand-tools, and sea-going barges and equipment associated with an operation on the water.

During the sea turtle nesting season, MDPR conducts daily surveys for sea turtle nests and relocates all loggerhead nests found along the beach from Sunny Isles south to Government Cut, a stretch of beach that includes Bal Harbour. This is done to prevent poaching or nest destruction due to beach maintenance, emergency vehicles which access the beach, and other human related causes. All loggerhead nests found during the surveys are relocated to a central hatchery on Miami Beach. Green and leatherback sea turtle nests are left in situ, and the eggs are allowed to hatch naturally. MDPR closely monitors these nests and controls the release of hatchlings into the sea. Controlled releases are conducted as far as possible away from T-head groins.

Action Area

The project is located on the southeast Florida coast at Bal Harbour, a coastal municipality in Miami-Dade County which has 0.85 mile of shoreline. This shoreline is part of the Miami-Dade County Beach Erosion Control and Hurricane Protection Project. The area is bounded by Bakers Haulover Inlet to the north and the town of Surfside to the south (Figure 1). The shoreline along Bal Harbour is lined with hotels, condominiums, and other commercial establishments, and the area is used extensively for recreation. The project area is not located in a Coastal Barrier Resources Unit.

STATUS OF THE SPECIES AND CRITICAL HABITAT RANGEWIDE

Species/Critical Habitat Description

Loggerhead Sea Turtle

The loggerhead sea turtle, listed as a threatened species on July 28, 1978, (43 FR 32800), inhabits the continental shelves and estuarine environments along the margins of the Atlantic, Pacific, and Indian Oceans. Loggerhead sea turtles nest within the continental United States (U.S.) from Louisiana to Virginia. Major nesting concentrations in the U.S. are found on the coastal islands of North Carolina, South Carolina, and Georgia, and on the Atlantic and Gulf coasts of Florida (Hopkins and Richardson 1984).

No critical habitat has been designated for the loggerhead sea turtle.

Green Sea Turtle

The green sea turtle was federally listed as a protected species on July 28, 1978, (43 FR 32800). Breeding populations of the green turtle in Florida and along the Pacific Coast of Mexico are listed as endangered; all other populations are listed as threatened. The green turtle has a

worldwide distribution in tropical and subtropical waters. Major green turtle nesting colonies in the Atlantic occur on Ascension Island, Aves Island, Costa Rica, and Surinam. Within the U.S., green turtles nest in small numbers in the U.S. Virgin Islands and Puerto Rico, and in larger numbers along the east coast of Florida, particularly in Brevard, Indian River, St. Lucie, Martin, Palm Beach, and Broward Counties (National Marine Fisheries Service [NMFS] and Service 1991a). Nesting also has been documented along the Gulf Coast of Florida on Santa Rosa Island (Okaloosa and Escambia Counties) and from Pinellas County through Collier County (FWC statewide nesting database, unpublished data). Green turtles have been known to nest in Georgia, but only on rare occasions (Georgia Department of Natural Resources statewide nesting database, unpublished data). The green turtle also nests sporadically in North Carolina and South Carolina (North Carolina Wildlife Resources Commission statewide nesting database, unpublished data; South Carolina Department of Natural Resources statewide nesting database, unpublished data). Unconfirmed nesting of green turtles in Alabama has also been reported (Bon Secour National Wildlife Refuge nesting reports, unpublished data).

Critical habitat for the green sea turtle has been designated for the waters surrounding Culebra Island, Puerto Rico, and its outlying keys.

Leatherback Sea Turtle

The leatherback sea turtle was listed as an endangered species on June 2, 1970, (35 FR 8491) and nests on shores of the Atlantic, Pacific, and Indian Oceans. Non-breeding animals have been recorded as far north as the British Isles and the Maritime Provinces of Canada and as far south as Argentina and the Cape of Good Hope (Pritchard 1992). Nesting grounds are distributed worldwide, with the Pacific Coast of Mexico supporting the world's largest known concentration of nesting leatherbacks. The largest nesting colony in the wider Caribbean region is found in French Guiana, but nesting occurs frequently, although in lesser numbers, from Costa Rica to Columbia and in Guyana, Surinam, and Trinidad (NMFS and Service 1992; National Research Council 1990).

The leatherback regularly nests in the U.S. in Puerto Rico, the U.S. Virgin Islands, and along the Atlantic coast of Florida as far north as Georgia (NMFS and Service 1992). Leatherback turtles have been known to nest in Georgia, South Carolina, and North Carolina, but only on rare occasions (North Carolina Wildlife Resources Commission 1995, unpublished data; Georgia Department of Natural Resources statewide nesting databases, unpublished data). Leatherback nesting also has been reported on the northwest coast of Florida (LeBuff 1990; FWC statewide nesting database, unpublished data); a false crawl (non-nesting emergence) has been observed on Sanibel Island (LeBuff 1990).

Marine and terrestrial critical habitat for the leatherback sea turtle has been designated at Sandy Point on the western end of the island of Saint Croix, U.S. Virgin Islands.

Hawksbill Sea Turtle

The hawksbill sea turtle was listed as an endangered species on June 2, 1970, (35 FR 8491). The hawksbill is found in tropical and subtropical seas of the Atlantic, Pacific, and Indian Oceans. The species is widely distributed in the Caribbean Sea and western Atlantic Ocean. Within the continental U.S., hawksbill sea turtle nesting is rare and is restricted to the southeastern coast of Florida (Volusia through Miami-Dade Counties) and the Florida Keys (Monroe County) (Meylan 1992; Meylan et al. 1995). However, hawksbill tracks are difficult to differentiate from those of loggerheads and may not be recognized by surveyors. Therefore, surveys in Florida likely underestimate actual hawksbill nesting numbers (Meylan et al. 1995). In the U.S. Caribbean, hawksbill nesting occurs on beaches throughout Puerto Rico and the U.S. Virgin Islands (NMFS and Service 1993).

Critical habitat for the hawksbill sea turtle has been designated for selected beaches and/or waters of Mona, Monito, Culebrita, and Culebra Islands, Puerto Rico.

Kemp's Ridley Sea Turtle

The Kemp's ridley sea turtle was listed as endangered on December 2, 1970, (35 FR 18320). It has one of the most restricted distributions of any sea turtle and is found mainly in coastal Gulf of Mexico and the northwest Atlantic (Service 1999). Occasionally, individuals will be found in the western Atlantic. Nesting occurs almost entirely on one stretch of beach in northeast Mexico. Nesting in Florida is rare and has only been noted 17 times between 1979 and 2004 (FWC 2005a).

No critical habitat has been designated for the Kemp's ridley sea turtle.

Life History

Loggerhead Sea Turtle

Loggerheads are known to nest from one to seven times within a nesting season (Talbert et al. 1980; Richardson and Richardson 1982; Lenarz et al. 1981); the mean is approximately 4.1 (Murphy and Hopkins 1984). The interval between nesting events within a season varies around a mean of about 14 days (Dodd 1988). Mean clutch size varies from about 100 to 126 along the southeastern U.S. coast (NMFS and Service 1991b). Nesting migration intervals of 2 to 3 years are most common in loggerheads, but the number can vary from 1 to 7 years (Dodd 1988). Age at sexual maturity is believed to be about 20 to 30 years (Turtle Expert Working Group 1998).

Green Sea Turtle

Green turtles deposit from 1 to 9 clutches within a nesting season, but the average is about 3.3. The interval between nesting events within a season varies around a mean of about 13 days (Hirth 1997). Mean clutch size varies widely among populations. Average clutch size reported from 130 clutches in Florida was 136 eggs (Witherington and Ehrhart 1989). Only occasionally

do females produce clutches in successive years. Usually 2, 3, 4, or more years intervene between breeding seasons (NMFS and Service 1991a). Age at sexual maturity is believed to be 20 to 50 years (Hirth 1997).

Leatherback Sea Turtle

Leatherbacks nest an average of 5 to 7 times within a nesting season, with an observed maximum of 11 (NMFS and Service 1992). The interval between nesting events within a season is about 9 to 10 days. Clutch size averages 80 to 85 yolked eggs, with the addition of usually a few dozen smaller, yolkless eggs, mostly laid toward the end of the clutch (Pritchard 1992). Nesting migration intervals of 2 to 3 years were observed in leatherbacks nesting on the Sandy Point National Wildlife Refuge, Saint Croix, U.S. Virgin Islands (McDonald and Dutton 1996). Leatherbacks are believed to reach sexual maturity in 6 to 10 years (Zug and Parham 1996).

Hawksbill Sea Turtle

Hawksbills nest on average about 4.5 times per season at intervals of approximately 14 days (Corliss et al. 1989). In Florida and the U.S. Caribbean, clutch size is approximately 140 eggs, although several records exist of over 200 eggs per nest (NMFS and Service 1993). On the basis of limited information, nesting migration intervals of 2 to 3 years appear to predominate. Hawksbills are recruited into the reef environment at about 14 inches in length and are believed to begin breeding about 30 years later. However, the time required to reach 14 inches in length is unknown and growth rates vary geographically. As a result, actual age at sexual maturity is not known.

Kemp's Ridley Sea Turtle

Nesting season for Kemp's ridleys is from April to July. The average clutch size, based on a 14-year study, is 100.8 eggs. It takes from 45 to 58 days for hatchlings to emerge. The number of nests that a female lays per season has been estimated at 1.5 (Marquez et al. 1982), 2.31 (Pritchard 1990), and 3.025 (Rostal 1991). Approximately 58 percent of females nest each year (Marquez et al. 1982). Time to sexual maturity has been estimated at 6 to 7 years (Marquez 1972), but this was based on limited data and may be too low (Service 1999).

Population Dynamics

Loggerhead Sea Turtle

Total estimated nesting in the Southeast is approximately 68,000 to 90,000 nests per year (FWC statewide nesting database 2002, unpublished data; Georgia Department of Natural Resources statewide nesting database 2002, unpublished data; South Carolina Department of Natural Resources statewide nesting database 2002, unpublished data; North Carolina Wildlife Resources Commission unpublished statewide nesting database 2002, unpublished data). In 1998, there were over 80,000 nests in Florida alone. From a global perspective, the southeastern U.S. nesting aggregation is of paramount importance to the survival of the species and is second

in size only to that which nests on islands in the Arabian Sea off Oman (Ross 1982; Ehrhart 1989; NMFS and Service 1991b). The status of the Oman colony has not been evaluated recently (Meylan et al. 1995). The loggerhead nesting aggregations in Oman, the southeastern U.S., and Australia account for about 88 percent of nesting worldwide (NMFS and Service 1991b). About 80 percent of loggerhead nesting in the southeastern U.S. occurs in six Florida counties (Brevard, Indian River, St. Lucie, Martin, Palm Beach, and Broward Counties) (NMFS and Service 1991b).

Green Sea Turtle

The number of green sea turtles nesting each year fluctuates widely, and population trends are difficult to assess. However, it is estimated that 200 to 1,100 females nest on U.S. beaches each year (NMFS 2005). In the U.S. Pacific, over 90 percent of nesting throughout the Hawaiian archipelago occurs at the French Frigate Shoals, where about 200 to 700 females nest each year (NMFS and Service 1998a). Elsewhere in the U.S. Pacific, nesting takes place at scattered locations in the Commonwealth of the Northern Marianas, Guam, and American Samoa. In the western Pacific, the largest green turtle nesting aggregation in the world occurs on Raine Island, Australia, where thousands of females nest nightly in an average nesting season (Limpus et al. 1993). In the Indian Ocean, major nesting beaches occur in Oman where 30,000 females are reported to nest annually (Ross and Barwani 1995).

Leatherback Sea Turtle

Recent estimates of global nesting populations indicate 26,000 to 43,000 nesting females annually (Spotila et al. 1996). The largest nesting populations at present occur in the western Atlantic in French Guiana (4,500 to 7,500 females nesting per year) and Colombia (an estimated several thousand nests annually), and in the western Pacific in West Papua (formerly Irian Jaya) and Indonesia (about 600 to 650 females nesting per year). In the U.S., small nesting populations occur on the Florida east coast (100 females per year) (FWC 2005b), Sandy Point, U.S. Virgin Islands (50 to 190 females per year) (Alexander et al. 2002), and Puerto Rico (30 to 90 females per year).

Hawksbill Sea Turtle

About 15,000 females are estimated to nest each year throughout the world with the Caribbean accounting for 20 to 30 percent of the world's hawksbill population. Only five regional populations remain with more than 1,000 females nesting annually (Seychelles, Mexico, Indonesia, and two in Australia) (Meylan and Donnelly 1999). Mexico is now the most important region for hawksbills in the Caribbean with about 3,000 nests per year (Meylan 1999). Other significant but smaller populations in the Caribbean still occur in Martinique, Jamaica, Guatemala, Nicaragua, Grenada, Dominican Republic, Turks and Caicos Islands, Cuba, Puerto Rico, and U.S. Virgin Islands. In the U.S. Caribbean, about 150 to 500 nests per year are laid on Mona Island, Puerto Rico, and 70 to 130 nests per year on Buck Island Reef National Monument, U.S. Virgin Islands. In the U.S. Pacific, hawksbills nest only on main island beaches

in Hawaii, primarily along the east coast of the island of Hawaii. Hawksbill nesting has also been documented in American Samoa and Guam (NMFS and Service 1998b).

Kemp's Ridley Sea Turtles

Nearly the entire female population of Kemp's ridleys nests on one beach near Ranch Nuevo, Mexico. In 1991 there were 1,155 nests recorded from this beach, and 3,600 nests recorded in 1998. The 1991 nest number was used along with the nest per season estimates of Marquez et al. (1982), Rostal (1991), and Pritchard (1990) to estimate the number of females that nested. The estimates ranged from 428 to 770 (Service 1999). Nesting in the U.S. is rare with no more than 30 nests in any one year (Turtle Expert Working Group 2000; FWC 2005a). Nests in Florida have been recorded only in Escambia, Lee, Pinellas, Santa Rosa, Volusia, and Sarasota Counties (FWC 2005a). Only false crawls have been recorded in Palm Beach County (Meylan et al. 1995, FWC 2005a).

Status and Distribution

Loggerhead Sea Turtle

Genetic research involving analysis of mitochondrial DNA has identified five different loggerhead subpopulations/nesting aggregations in the western North Atlantic: (1) the Northern Subpopulation occurring from North Carolina to around Cape Canaveral, Florida (about 29° North); (2) South Florida Subpopulation occurring from about 29° North on Florida's east coast to Sarasota on Florida's west coast; (3) Dry Tortugas, Florida, Subpopulation, (4) Northwest Florida Subpopulation occurring at Eglin Air Force Base and the beaches near Panama City; and (5) Yucatán Subpopulation occurring on the eastern Yucatán Peninsula, Mexico (Bowen 1994, 1995; Bowen et al. 1993; Encalada et al. 1998; Pearce 2001). These data indicate that gene flow between these five regions is very low. If nesting females are extirpated from one of these regions, regional dispersal will not be sufficient to replenish the depleted subpopulation. The Northern Subpopulation has declined substantially since the early 1970s, but most of that decline occurred prior to 1979. No significant trend has been detected in recent years (Turtle Expert Working Group 1998, 2000). Adult loggerheads of the South Florida Subpopulation have shown significant increases over the last 25 years, indicating that the population is recovering, although a trend could not be detected from the State of Florida's Index Nesting Beach Survey program from 1989 to 2002. Nesting surveys in the Dry Tortugas, Northwest Florida, and Yucatán Subpopulations have been too irregular to date to allow for a meaningful trend analysis (Turtle Expert Working Group 1998, 2000).

Threats include incidental take from channel dredging and commercial trawling, longline, and gill net fisheries; loss or degradation of nesting habitat from coastal development and beach armoring; disorientation of hatchlings by beachfront lighting; excessive nest predation by native and non-native predators; degradation of foraging habitat; marine pollution and debris; watercraft strikes; and disease. There is particular concern about the extensive incidental take of juvenile loggerheads in the eastern Atlantic by longline fishing vessels from several countries.

Green Sea Turtle

Total population estimates for the green turtle are unavailable, and trends based on nesting data are difficult to assess because of large annual fluctuations in numbers of nesting females. For instance, in Florida, where the majority of green turtle nesting in the southeastern U.S. occurs, estimates range from 267 to 6,981 nests annually between 1989 and 2004 at core index beaches, where approximately 54 percent of the state's green sea turtle nesting occurs (FWC 2005c). Populations in Surinam, and Tortuguero, Costa Rica, may be stable, but there is insufficient data for other areas to confirm a trend.

A major factor contributing to the green turtle's decline worldwide is commercial harvest for eggs and food. Fibropapillomatosis, a disease of sea turtles characterized by the development of multiple tumors on the skin and internal organs, is also a mortality factor and has seriously impacted green turtle populations in Florida, Hawaii, and other parts of the world. The tumors interfere with swimming, eating, breathing, vision, and reproduction, and turtles with heavy tumor burdens may die. Other threats include loss or degradation of nesting habitat from coastal development and beach armoring; disorientation of hatchlings by beachfront lighting; excessive nest predation by native and non-native predators; degradation of foraging habitat; marine pollution and debris; watercraft strikes; and incidental take from channel dredging and commercial fishing operations.

Leatherback Sea Turtle

Declines in leatherback nesting have occurred over the last two decades along the Pacific coasts of Mexico and Costa Rica. The Mexican leatherback nesting population, once considered to be the world's largest leatherback nesting population (65 percent of the worldwide population), is now less than 1 percent of its estimated size in 1980. Spotila et al. (1996) estimated the number of leatherback sea turtles nesting on 28 beaches throughout the world from the literature and from communications with investigators studying those beaches. The estimated worldwide population of leatherbacks in 1995 was about 34,500 females on these beaches with a lower limit of about 26,200 and an upper limit of about 42,900. This is less than one third the 1980 estimate of 115,000. Leatherbacks are rare in the Indian Ocean and in very low numbers in the western Pacific Ocean. The largest population is in the western Atlantic. Using an age-based demographic model, Spotila et al. (1996) determined that leatherback populations in the Indian Ocean and western Pacific Ocean cannot withstand even moderate levels of adult mortality and that even the Atlantic populations are being exploited at a rate that cannot be sustained. They concluded that leatherbacks are on the road to extinction and further population declines can be expected unless we take action to reduce adult mortality and increase survival of eggs and hatchlings.

The crash of the Pacific leatherback population is believed primarily to be the result of exploitation by humans for the eggs and meat, as well as incidental take in numerous commercial fisheries of the Pacific. Other factors threatening leatherbacks globally include loss or degradation of nesting habitat from coastal development; disorientation of hatchlings by

beachfront lighting; excessive nest predation by native and non-native predators; degradation of foraging habitat; marine pollution and debris; and watercraft strikes.

Hawksbill Sea Turtle

The hawksbill sea turtle has experienced global population declines of 80 percent or more during the past century and continued declines are projected (Meylan and Donnelly 1999). Most populations are declining, depleted, or remnants of larger aggregations. Hawksbills were previously abundant, as evidenced by high-density nesting at a few remaining sites and by trade statistics. The decline of this species is primarily due to human exploitation for tortoiseshell. While the legal hawksbill shell trade ended when Japan agreed to stop importing shells in 1993, a significant illegal trade continues. It is believed that individual hawksbill populations around the world will continue to disappear under the current regime of exploitation for eggs, meat, and tortoiseshell, loss of nesting and foraging habitat, incidental capture in fishing gear, ingestion of and entanglement in marine debris, oil pollution, and boat collisions. Hawksbills are closely associated with coral reefs, one of the most endangered of all marine ecosystem types.

Kemp's Ridley Sea Turtle

In the early 1960s as many as 40,000 females nested synchronously near Rancho Nuevo, Mexico (Carr 1963; Hildebrand 1963). Nesting declined to an estimated 700 nests in the mid-1980s (Turtle Expert Working Group 2000). Nest numbers have recently increased to more than 3,000 per year (Turtle Expert Working Group 2000). Reasons for initial decline included incidental take from commercial fishing and dredging operations, marine pollution and debris, and poaching. There are no major threats to the main nesting beach in Rancho Nuevo; however this is expected to change with increasing population and development pressures (Service 1999). Nests in the Ranch Nuevo area are moved to central corrals for protection from predation and poaching.

Analysis of the species/critical habitat likely to be affected

The proposed action has the potential to adversely affect nesting females, nests, and hatchlings within the proposed project area. The effects of the proposed action on sea turtles will be considered further in the remaining sections of this biological opinion. Potential effects include:

- destruction of nests deposited within the boundaries of the proposed project;
- harassment in the form of disturbing or interfering with female turtles attempting to nest within the construction area or on adjacent beaches as a result of construction activities;
- disorientation of hatchling turtles on beaches adjacent to the construction area as they emerge from the nest and crawl to the water as a result of project lighting;
- behavior modification of nesting females due to escarpment formation within the project area during a nesting season resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to deposit eggs; and
- aborted nest digging if a female encounters the crest of a groin because sand depth is too shallow for nest construction.

Critical habitat has not been designated in the continental U.S.; therefore, the proposed action would not result in an adverse modification.

ENVIRONMENTAL BASELINE

Status of the Species/Critical Habitat Within the Action Area

The FWC's marine turtle permit holders conduct surveys of sea turtle nesting and nesting activity each year during the nesting season for various sites in Miami-Dade County. The Bal Harbour project area beach lies primarily within the survey area covered by FWC zone N, which is bounded by zone M to the south and zone O to the north. These three zones cover 1.8 miles of nesting beach from the middle of the town of Surf Side to the middle of the beach at Haulover (Figure 1). Nesting and false crawl data for sea turtles in these three zones are given in Table 2.

Loggerhead Sea Turtle

The loggerhead sea turtle nesting and hatching season for the southern Florida Atlantic beaches (Brevard through Miami-Dade Counties) extends from March 15 through November 30. Incubation ranges from about 45 to 95 days. The number of loggerhead sea turtle nests laid in FWC zones M, N, and O each year between 1998 and 2004 ranged from 23 in 2002 to 82 in 1999 (Table 2). The number of false crawls each year ranged from 23 to 84 (Table 2).

Green Sea Turtle

The green sea turtle nesting and hatching season for the southern Florida Atlantic beaches (Brevard through Miami-Dade Counties) extends from May 1 through November 30. Incubation ranges from about 45 to 75 days. The number of green sea turtle nests laid in FWC zones M, N, and O between 1998 and 2004 ranged from zero during four of those years to seven in 2002. The number of false crawls each year ranged from zero to six (Table 2).

Leatherback Sea Turtle

The leatherback sea turtle nesting and hatching season for the southern Florida Atlantic beaches (Brevard through Miami-Dade Counties) extends from February 15 through November 15. Incubation ranges from about 55 to 75 days. No leatherback sea turtle nests were laid in FWC zones M, N, and O between 1998 and 2004, though there was one false crawl in 2002 (Table 2).

Hawksbill Sea Turtle

The hawksbill sea turtle nesting and hatching season for the southern Florida Atlantic beaches (Brevard through Miami-Dade Counties) extends from June 1 through December 31. Incubation lasts about 60 days. Although hawksbill sea turtles are known to occur offshore from the project area, no nests have been reported for this species within the project area (FWC 2005d).

Kemp's Ridley Sea Turtles

Kemp's ridley sea turtles rarely nest in the U.S., with no more than 30 nests in any one year (Turtle Expert Working Group 2000; FWC 2005a). No nests have been recorded for Miami-Dade County between 1979 and 2004 (FWC 2005a), though false crawls have been recorded for Palm Beach County (Meylan et al. 1995, FWC 2005a).

Factors Affecting Species Habitat Within the Action Area

The shoreline along Bal Harbour is lined with hotels, condominiums, and other commercial establishments. The area is used extensively for recreation. The dune system in Miami-Dade County between Government Cut and Bakers Haulover Inlet is largely artificial and was built as part of the Miami-Dade County Beach Erosion Control and Hurricane Protection Project.

Miami-Dade County is a heavily populated county which also receives a large volume of tourists, particularly during the winter months. Beaches with access to the general public are heavily used year round. Beaches associated with condominiums, hotels and apartments have more restricted access for the general public, but receive use from the many visitors as well as the general public who walk or jog along the beachfront. The beach at Bal Harbour has public access and receives heavy use by swimmers and sunbathers. Adjacent to these beaches are many condominiums and hotels used by long and short term visitors and residents of the area. Other water related activities within the project area include on-shore and offshore fishing, snorkeling, scuba diving, windsurfing and recreational boating. Most of the boating activity in the area originates from either Bakers Haulover Inlet or Government Cut. Both offshore fishing and diving utilize the natural and artificial reefs located within and adjacent to the project area.

The Bal Harbour beach experiences higher erosion rates than other Miami-Dade County beaches. The region along the northern 2,000 feet of Bal Harbour is the most rapidly eroding portion of the project. Material is transported out of this area in both directions, with a large percentage of losses due to sediment transport northward around the jetty and into the inlet.

It has been determined that deterioration of the existing groin field in this area is the main cause of an increase in beach erosion in the project site. This project involves removal of the five existing groins and reconstruction of five rubble-mound groins in an improved configuration. Any beach construction and renourishment associated with groin removal and construction will be handled under separate consultation with the Service. The purpose of this project is to better stabilize Bal Harbour's shoreline between periodic beach renourishments. It is expected that once the new groin system is in place, the beach will be more stable, retain sand for longer periods, and increase the time between beach renourishments.

EFFECTS OF THE ACTION

The analysis of the direct and indirect effects of the proposed action on sea turtles and its interrelated and interdependent activities was based on the following factors.

Factors to be Considered

The proposed action has the potential to adversely affect nesting females, nests, and hatchlings within the proposed project area through the establishment of erosion control structures.

Analyses for Effects of the Action

Beneficial Effects

Erosion control structures constructed in appropriate high erosional areas or to mitigate the effects of shoreline armoring, may benefit sea turtles in areas by reestablishing nesting habitat where none currently exists. However, caution should be exercised not to automatically assume that reestablishing nesting habitat will wholly benefit sea turtle populations without determining the extent emergent erosion control structures may affect hatchling behavior.

The groins are designed to retain, maintain, and stabilize the beach, thereby reducing the need for beach renourishment from three events over a 21 year period down to two events during the same period.

Direct Effects

Direct effects are those direct or immediate effects of a project on the species or its habitat. Potential adverse impacts during the project construction phase include disturbance of existing nests, which may have been missed, disturbance of females attempting to nest, and disorientation of emerging hatchlings. Heavy equipment will be required to install the groins, and this equipment will have to traverse the sandy beach to the project site, which could result in harm to nesting females, nests, and emerging hatchlings. Since a large trench will be excavated on the beach and be present during the night for some portion of the construction, a potential threat to nesting females and emerging hatchlings will exist.

Following construction, the presence of groins has the potential to adversely affect sea turtles. For instance, they may:

- interfere with the egress and ingress of adult females at nesting sites;
- alter downdrift beach profiles through erosion, escarpment formation, and loss of sandy berms; interfere with nest digging if a female encounters the groin crest because sand depth is too shallow for nest construction;
- trap and/or obstruct hatchlings during a critical life-history stage;
- increase hatchling and adult female energy expenditure in attempts to overcome the structures; and
- attract additional predatory fish or concentrate existing predatory fish, thereby increasing the potential of hatchling predation.

1. Nest relocation

Project construction is likely to occur during the sea turtle nesting season, therefore sea turtle nests will be relocated during the construction window. Besides the potential for missing nests

during a nest relocation program, there is a potential for eggs to be damaged by their movement, particularly if eggs are not relocated within 12 hours of deposition (Limpus et al. 1979). Nest relocation can have adverse impacts on incubation temperature (and hence sex ratios), gas exchange parameters, hydric environment of nests, hatching success, and hatchling emergence (Limpus et al. 1979, Ackerman 1980, Parmenter 1980, Spotila et al. 1983, McGehee 1990). Relocating nests into sands deficient in oxygen or moisture can result in mortality, morbidity, and reduced behavioral competence of hatchlings. Water availability is known to influence the incubation environment of the embryos and hatchlings of turtles with flexible-shelled eggs, which has been shown to affect nitrogen excretion (Packard et al. 1984), mobilization of calcium (Packard and Packard 1986), mobilization of yolk nutrients (Packard et al. 1985), hatchling size (Packard et al. 1981, McGehee 1990), energy reserves in the yolk at hatching (Packard et al. 1988), and locomotory ability of hatchlings (Miller et al. 1987).

Comparisons of hatching success between relocated and in situ nests have noted significant variation ranging from a 21 percent decrease to a 9 percent increase for relocated nests (Florida Department of Environmental Protection, unpublished data). Comparisons of emergence success between relocated and in situ nests have also noted significant variation ranging from a 23 percent decrease to a 5 percent increase for relocated nests (DEP, unpublished data). A 1994 DEP study of hatching and emergence success of in situ and relocated nests at seven sites in Florida found that hatching success was lower for relocated nests in five of seven cases with an average decrease for all seven sites of 5.01 percent (range = 7.19 percent increase to 16.31 percent decrease). Emergence success was lower for relocated nests in all seven cases by an average of 11.67 percent (range = 3.6 to 23.36 percent) (Meylan 1995).

2. Missed nests

Although a nesting survey and nest marking program would reduce the potential for nests to be impacted by construction activities, nests may be inadvertently missed (when crawls are obscured by rainfall, wind, and/or tides) or misidentified as false crawls during daily patrols. Even under the best of conditions, about 7 percent of the nests can be misidentified as false crawls by experienced sea turtle nest surveyors (Schroeder 1994).

3. Equipment

The placement of groin materials, as well as the use of heavy machinery or equipment on the beach during a construction project may also have adverse effects on sea turtles. The equipment can create barriers to nesting females emerging from the surf and crawling up the beach, causing a higher incidence of false crawls and unnecessary energy expenditure. The equipment can also create impediments to hatchling sea turtles as they crawl to the ocean.

4. Artificial lighting

Visual cues are the primary sea-finding mechanism for hatchling sea turtles (Mrosovsky and Carr 1967, Mrosovsky and Shettleworth 1968, Dickerson and Nelson 1989, Witherington and Bjorndal 1991). When artificial lighting is present on or near the beach, it can misdirect hatchlings once they emerge from their nests and prevent them from reaching the ocean (Philbosian 1976; Mann 1977; DEP, unpublished data). In addition, a significant reduction in sea turtle nesting activity has been documented on beaches illuminated with artificial lights

(Witherington 1992). Therefore, construction lights along a project beach and on the dredging vessel may deter females from coming ashore to nest, misdirect females trying to return to the surf after a nesting event, and misdirect emergent hatchlings from adjacent non-project beaches. Any source of bright lighting can profoundly affect the orientation of hatchlings, both during the crawl from the beach to the ocean and once they begin swimming offshore. Hatchlings attracted to light sources on dredging barges may not only suffer from interference in migration, but may also experience higher probabilities of predation by predatory fishes that are also attracted to the barge lights. This impact could be reduced by using the minimum amount of light necessary (may require shielding) or low pressure sodium lighting during project construction.

5. Entrapment/physical obstruction

As the sand erodes, the groins will gradually become exposed. The physical obstruction of the T-heads may affect both adult female and hatchling sea turtles. Adult females may be deterred from approaching their preferred nesting locations because of the shore parallel barrier the T-heads pose. The groins and their T-heads may also serve as impediments to offshore migration by hatchlings. When exposed, these structures have the potential to interfere with the egress and/or ingress of adult females at nesting sites where they may proceed around them successfully, abort nesting for that night, or move to another section of beach to nest. Females attempting to dig nests above groins which are as-yet unexposed but which have insufficient sand on top of them for nest construction may also abort nesting for that night. These situations can cause an increase in energy expenditure, and, when the body of the groins is exposed, can act as a barrier between beach segments and also prevent nesting on the T-groin alignment.

T-groins constructed in Palm Beach County, Florida were observed to serve as impediments to the offshore migration by hatchlings. Howard and Davis (1999) found that 13 percent of hatchlings emerging from nests laid near T-head groins encountered the groins on their trek to the ocean. However in this case, the project design for sand placement around the T-groins was not properly followed. The project was designed to have a narrower fill section in the vicinity of the groins so the shore parallel T-heads would be seaward of the high water line and hatchlings would be able to swim over them. However, the groin section received more fill than expected which caused the high water line to be further seaward than expected. As a result, hatchlings were trapped in the corner of the structure at the head and body joint intersection. This was attributed to the exposure of the T-head and body above the high water line and the presence of artificial lighting in the vicinity of the groins which caused them to disorient in the direction of the T-groins.

Typically, sea turtles emerge from the nest at night when lower sand temperatures elicit an increase in hatchling activity (Witherington et al. 1990). After emergence, approximately 20 to 120 hatchlings crawl *en masse* immediately to the surf using predominately visual cues to orient themselves (Witherington and Salmon 1992, Lohmann et al. 1997). Upon reaching the water loggerhead and green turtle hatchlings orient themselves into the waves and begin a period of hyperactive swimming activity, or swim frenzy, which lasts for approximately 24 hours (Witherington 1991, Wyneken et al. 1990, Salmon and Wyneken 1987). The swim frenzy effectively moves the hatchling quickly away from shallow, predator rich, nearshore waters to the relative safety of deeper water (Wyneken et al. 2000, Gyuris 1994).

The first hour of a hatchling's life is precarious and predation is high, but threats decrease as hatchlings distance themselves from the natal beach (Stancyk 1982, Pilcher et al. 2000). Delays in hatchling migration (both on the beach and in the water) can cause added expenditures of energy and an increase of time spent in predator rich nearshore water.

Rarely will hatchlings encounter natural nearshore features that are similar to the emergent shore-parallel structures proposed for this project. However, observations of hatchling behavior during an encounter with a sand bar at low tide, a natural shore-parallel barrier, showed the hatchlings maintained their shore-perpendicular path seaward, by crawling over the sand bar versus deviating from this path to swim parallel around the sand bar through the trough, an easier alternative (B. Witherington, FWC, personal communication, 2001). Therefore, the T-groins may adversely effect sea turtle hatchlings by serving as a barrier or obstruction to sea turtle hatchlings and delaying offshore migration; depleting or increasing expenditure of the "swim frenzy" energy critical for reaching the relative safety of offshore development areas; and possibly entrapping hatchlings within the crevices of the structures or within eddies or other associated currents.

6. Predator concentration

The presence of T-groins and breakwaters has the potential to attract and concentrate predatory fishes and provide perching spots for predatory birds, resulting in higher probabilities of hatchling predation as hatchlings enter the ocean and attempt to reach offshore developmental habitat. It is known that hatchling predation in nearshore waters is high (Stancyk 1982, Wyneken and Salmon 1996, Gyuris 1994). There are many documented occurrences of nearshore predators captured with hatchlings found in their digestive tracts. During hatchling predation studies in Broward County, it was documented that predatory fish species, such as tarpon and snappers (*Lutjanus* sp.), targeted sea turtle hatchlings and "learned" where to concentrate foraging efforts (Wyneken et al. 1998). Therefore, a delay in the offshore migration can cause increased predation of sea turtle hatchlings (Glenn 1998, Gyuris 1994, Witherington and Salmon 1992).

Indirect Effects

Indirect effects are those effects that are caused by or result from the proposed action, are later in time, and are reasonably certain to occur. Many of the direct effects of groin construction may persist over time and become indirect impacts. These indirect effects include increased susceptibility of relocated nests to catastrophic events, the formation of escarpments, future sand migration, increased erosion downdrift of the groins, and impacts of debris on the beach from groin structure breakdown.

1. Increased susceptibility to catastrophic events

Nest relocation may concentrate eggs in an area making them more susceptible to catastrophic events. Hatchlings released from concentrated areas also may be subject to greater predation rates from both land and marine predators, because the predators learn where to concentrate their efforts (Glenn 1998, Wyneken et al. 1998).

2. Increased beachfront development

Pilkey and Dixon (1996) state that beach replenishment frequently leads to more development in greater density within shorefront communities that are then left with a future of further replenishment or more drastic stabilization measures. Dean (1999) also notes that the very existence of a beach nourishment project can encourage more development in coastal areas. Following completion of a beach nourishment project in Miami during 1982, investment in new and updated facilities substantially increased tourism there (National Research Council 1995). Increased building density immediately adjacent to the beach often resulted as older buildings were replaced by much larger ones that accommodated more beach users. Overall, shoreline management creates an upward spiral of initial protective measures resulting in more expensive development which leads to the need for more and larger protective measures. Increased shoreline development may adversely affect sea turtle nesting success. Greater development may support larger populations of mammalian predators, such as foxes and raccoons, than undeveloped areas (National Research Council 1990), and can also result in greater adverse effects due to artificial lighting, as discussed above. Any new development or redevelopment should be reviewed for opportunities to reduce artificial light affects to the nesting beaches.

3. Escarpment formation

On nourished beaches, steep escarpments may develop along their water line interface as they adjust from an unnatural construction profile to a more natural beach profile (Coastal Engineering Research Center 1984, Nelson et al. 1987). In addition, escarpments may develop on the crenulate beaches located between groins as the beaches equilibrate to their final positions. These escarpments can hamper or prevent access to nesting sites (Nelson and Blihovde 1998). Researchers have shown that female turtles coming ashore to nest can be discouraged by the formation of an escarpment, leading to situations where they choose marginal or unsuitable nesting areas to deposit eggs (e.g., in front of the escarpments, which often results in failure of nests due to prolonged tidal inundation). This impact can be minimized by leveling any escarpments prior to the nesting season.

4. Downdrift erosion related to erosion control structures

Erosion control structures (e.g., terminal groins, T-head groins, and breakwaters), in conjunction with beach nourishment, can help stabilize U.S. East Coast barrier island beaches (Leonard et al. 1990). However, groins and breakwaters often result in accelerated beach erosion downdrift of the structures (Komar 1983, National Research Council 1987, U.S. Army Corps of Engineers 1992) and corresponding degradation of suitable sea turtle nesting habitat (NMFS and Service 1991a, 1991b, 1992). Impacts first are noted and greatest changes are observed close to the structures, but effects eventually may extend great distances along the coast (Komar 1983). Beach nourishment only partly alleviates impacts of groin construction on downdrift beaches (Komar 1983).

Terminal groins operate by blocking the natural littoral drift of sand (Kaufman and Pilkey 1979, Komar 1983). Once sand fills the updrift groin area, some littoral drift and sand deposition on adjacent downdrift beaches occurs due to spillover. But, groins often force the river of sand into deeper offshore water, and sand that previously would have been deposited on downdrift beaches is lost from the system (Kaufman and Pilkey 1979). Conventional terminal rubble mound groins

control erosion by trapping sand and dissipating some wave energy. In general, terminal groins are not considered a favorable erosion control alternative because they usually impart stability to the updrift beach and transfer erosion to the downdrift side of the structure. Additionally, they deflect longshore currents offshore, and excess sand built up on the updrift side of the structure may be carried offshore by those currents. This aggravates downdrift erosion and erosion escarpments are common on the downdrift side of terminal groins (Humiston 2001).

Likewise, conventional T-groins function in a manner similar to a regular conventional groin, except that the shore parallel section adds a breakwater-like feature which dissipates more wave energy than a shore-perpendicular groin. A conventional T-groin consists of a terminal groin with a shore parallel section connected to the seaward end. However, the conventional T-head groin may also act as a barrier to littoral transport and result in adverse downdrift impacts (Humiston 2001).

5. Groin breakdown

If the structures fail and break apart, debris may spread along the beach, which may further impede nesting females from accessing suitable nesting sites (resulting in a higher incidence of false crawls) and trap hatchlings and nesting turtles (NMFS and Service 1991a, 1991b).

Species' Response to a Proposed Action

The Evaluation Report for the Beach Erosion Control and Hurricane Protection Project for Miami-Dade County, October 2001, identified several erosion hotspots in the county, including Bal Harbour. The Bal Harbour beach experiences higher erosion rates than other Miami-Dade County beaches. The region along the northern 2,000 feet of Bal Harbour is the most rapidly eroding portion of the project. Material is transported out of this area in both directions, with a large percentage of losses due to sediment transport northward around the jetty and into the inlet.

There is potential for long-term adverse effects on sea turtle hatchlings as a result of the groins. However, the Service acknowledges their potential benefits since they may minimize the effects of erosion on sea turtle nesting habitat, provide habitat within the project area, and extend the renourishment interval. The groins are designed to retain, maintain, and stabilize the beach, thereby reducing the need for beach renourishment from three events over a 21 year period down to two events during the same period. Nonetheless, an increase in sandy beach may not necessarily equate to an increase in suitable sea turtle nesting habitat.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA. The Corps plans to place sand within the project area to renourish the beach either before or after groin construction. Any beach construction and renourishment associated with groin removal and construction will

be handled under separate consultation with the Service. The Service is not aware of any other cumulative effects in the project area.

CONCLUSION

The proposed project will affect 0.85 mile of the approximately 1,400 miles of available sea turtle nesting habitat in the southeastern U.S. Although a variety of factors, including some that cannot be controlled, can influence how a groin construction project will perform from an engineering perspective, measures can be implemented to minimize impacts to sea turtles.

After reviewing the current status of the loggerhead, green, leatherback, hawksbill, and Kemp's ridley sea turtles, the environmental baseline for the action area, the effects of the proposed groin removal and reconstruction, and the cumulative effects, it is the Service's biological opinion that the groin removal and reconstruction, as proposed, is not likely to jeopardize the continued existence of the loggerhead, green, leatherback, hawksbill, and Kemp's ridley sea turtles and is not likely to destroy or adversely modify designated critical habitat. No critical habitat has been designated for the loggerhead, green, leatherback, hawksbill, and Kemp's ridley sea turtles in the continental U.S.; therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns such as breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are nondiscretionary, and must be implemented by the Corps so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

The Service anticipates approximately 0.85 mile of nesting beach habitat could be taken as a result of this proposed action. The take is expected to be in the form of: (1) destruction of all nests that may be constructed and eggs that may be deposited and missed by a nest survey and marking program within the boundaries of the proposed project; (2) destruction of all nests deposited during the period when a nest survey and marking program is not required to be in place within the boundaries of the proposed project; (3) reduced hatching success due to egg mortality during relocation and adverse conditions at the location site; (4) harassment in the form of disturbing or interfering with female turtles attempting to nest within the groin construction area or on adjacent beaches as a result of construction activities or groin presence; (5) behavior modification of nesting females or hatchlings due to the presence of the groins which may act as barriers to movement; (6) behavior modification of nesting females if they dig into shallowly buried groins, resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to deposit eggs; (7) misdirection of hatchling turtles on beaches adjacent to the construction area as they emerge from the nest and crawl to the water as a result of project lighting; (8) behavior modification of nesting females due to escarpment formation within the project area during a nesting season, resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to deposit eggs; (9) behavior modifications of hatchlings if they encounter the groins, resulting in entrapment, obstruction, or predation; and (10) destruction of nests from escarpment leveling within a nesting season when such leveling has been approved by the Service.

Incidental take is anticipated for the 0.85 mile of beach that have been identified for groin construction. The Service anticipates incidental take of sea turtles will be difficult to detect for the following reasons: (1) the turtles nest primarily at night and all nests are not found because [a] natural factors, such as rainfall, wind, and tides may obscure crawls and [b] human-caused factors, such as pedestrian and vehicular traffic, may obscure crawls, and result in nests being destroyed because they were missed during a nesting survey and egg relocation program; (2) the total number of hatchlings per undiscovered nest is unknown; (3) the reduction in percent hatching and emerging success per relocated nest over the natural nest site is unknown; (4) an unknown number of females may avoid the project beach and be forced to nest in a less than optimal area; (5) lights may misdirect an unknown number of hatchlings and cause death; and (6) escarpments may form and cause an unknown number of females from accessing a suitable nesting site. However, the level of take of these species can be anticipated by the disturbance of and groin construction on suitable turtle nesting beach habitat because: (1) turtles nest within the project site; (2) groin construction will likely occur during a portion of the nesting season; (3) the groin construction project will modify beach profile and width and increase the presence of escarpments; and (4) artificial lighting will misdirect nesting females and hatchlings.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species. Critical habitat has not been designated in the

project area; therefore, the project will not result in destruction or adverse modification of critical habitat.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of loggerhead, green, leatherback, hawksbill, and Kemp's ridley sea turtles.

1. If the proposed groin construction project will be conducted during the sea turtle nesting season, sea turtle protection measures as detailed in the following Terms and Conditions section must be employed to minimize the likelihood of take.
2. Immediately after completion of the groin construction project and prior to the next three nesting seasons, monitoring must be conducted to determine if escarpments are present and escarpments must be leveled as required to reduce the likelihood of impacting sea turtle nesting and hatching activities.
3. Contractors conducting the groin construction work must fully understand the sea turtle protection measures detailed in this incidental take statement.
4. During the sea turtle nesting season, construction equipment and materials must be stored in a manner that will minimize impacts to sea turtles to the maximum extent practicable.
5. During the sea turtle nesting season, lighting associated with the project must be minimized to reduce the possibility of disrupting and misdirecting nesting and/or hatchling sea turtles.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the ESA, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. From April 1 through November 30, construction activities must be conducted only during daylight hours to avoid encountering nesting females and emerging hatchling sea turtles. Construction activities must not occur in any location prior to completion of the necessary sea turtle protection measures outlined below.
2. Daily early morning surveys for sea turtle nests will be required if any portion of the groin construction project occurs during the period from April 1 through November 30. No construction activity may commence until completion of the sea turtle nesting survey each day. Nesting surveys must be initiated 65 days prior to groin construction activities or by April 1, whichever is later. Nesting surveys must continue through the end of the project or through September 30, whichever is earlier. If nests are constructed in areas where they may

be affected by construction activities, the nests must be left in place and marked for avoidance, or relocated per the following requirements.

- 2a. Nesting surveys, nest marking, and egg relocations will only be conducted by personnel with prior experience and training in nesting survey, nest marking, and egg relocation procedures. Surveyors must have a valid FWC permit. Nesting surveys must be conducted daily between sunrise and 9 a.m. Surveys must be performed in such a manner so as to ensure that project activity does not occur in any location prior to completion of the necessary sea turtle protection measures.
- 2b. Loggerhead sea turtle nests will be relocated by the MDPR to a central hatchery on Miami Beach. Nests must be moved no later than 9 a.m. the morning following deposition.
- 2c. Nests deposited by green, leatherback, hawksbill, and Kemp's ridley sea turtles within the project site and access areas must be left in place and marked for avoidance unless other factors threaten the success of the nest (nest laid below debris line marking the typical high tide, erosion). The actual location of the clutch will be determined and nests will be marked. A circle with a radius of 10 feet, centered at the clutch (or the center of the disturbed area if the eggs cannot be located), will be marked by stake and survey tape or string. No construction activities will enter this circle, and no adjacent construction will be allowed which might directly or indirectly disturb the area within the staked circle.
3. To the maximum extent practicable, all excavations and temporary alteration of beach topography will be filled or leveled to the natural beach profile prior to 9:00 p.m. each day. During any periods when excavated trenches must remain on the beach at night, nighttime sea turtle monitoring by the sea turtle permit holder will be required in the project area in order to further reduce possible impacts to nesting and hatchling sea turtles. Nighttime monitors will record data on false crawls, successful nesting, and any additional activities of nesting or hatchling sea turtles in the project area.
4. If any nesting turtles are sighted on the beach during daylight hours, construction activities must cease immediately until the turtle has returned to the water, and the sea turtle permit holder responsible for nest monitoring has marked any nest that may have been laid for avoidance.
5. On-beach access to the construction site will be restricted to the wet sand below MHW.
6. Visual surveys for escarpments along the project area must be made following completion of the groin construction project and prior to April 1 for 3 subsequent years. Escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet must be leveled to the natural beach contour by April 1. If the project is completed during the sea turtle nesting and hatching season, escarpments may be required to be leveled immediately, while protecting nests that have been relocated or left in place. The Service

must be contacted immediately if subsequent reformation of escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet occurs during the nesting and hatching season to determine the appropriate action to be taken. If it is determined that escarpment leveling is required during the nesting or hatching season, the Service will provide a brief written authorization that describes methods to be used to reduce the likelihood of impacting existing nests. An annual summary of escarpment surveys and actions taken must be submitted to the Service.

7. The applicant must arrange a meeting between representatives of the contractor, the Service, the FWC, and the permitted person responsible for nesting surveys, nest marking, and egg relocation at least 30 days prior to the commencement of work on this project. At least 10 days advance notice must be provided prior to conducting this meeting. This will provide an opportunity for explanation and/or clarification of the sea turtle protection measures.
8. From April 1 through November 30, staging areas for and temporary storage of construction equipment must be located off the beach to the maximum extent practicable. Nighttime storage of construction equipment not in use must be off the beach to minimize disturbance to sea turtle nesting and hatching activities. Temporary storage of equipment on the beach must be in such a manner so as to impact the least amount of nesting habitat and shall likewise not compromise the integrity of the dune systems.
9. No temporary lighting of the construction area is authorized at anytime during the sea turtle nesting season from April 1 through November 30 with the following exception. Lighting will be allowed if safety lighting is required at any excavated trenches that must remain on the beach at night. This lighting must be limited to the immediate construction area only and must be the minimal lighting necessary to comply with safety requirements. Shielded low pressure sodium vapor lights are recommended to minimize illumination of the nesting beach and nearshore waters. Lighting on offshore equipment must be minimized through reduction, shielding, lowering, and appropriate placement of lights to avoid excessive illumination of the water, while meeting all U.S. Coast Guard and Occupational Safety and Health Administration requirements. Shielded low pressure sodium vapor lights are highly recommended for lights on offshore equipment that cannot be eliminated.
10. No permanent exterior lighting will be installed in association with this construction project.
11. In the event a groin structure fails or begins to disintegrate, all debris and structural material must be removed from the nesting beach area and deposited off-beach immediately. If maintenance of a groin structure is required during the period from April 1 through November 30, no work will be initiated without prior coordination with the South Florida Ecological Services Office.
12. The groin system must be removed if it is determined to not be effective or to be causing a significant adverse impact to the beach and dune system.

13. A report describing the actions taken to implement the terms and conditions of this incidental take statement must be submitted to the South Florida Ecological Services Office within 60 days of completion of the proposed work for each year when the activity has occurred. This report will include the dates of actual construction activities; names and qualifications of personnel involved in nest surveys, marking, and relocation activities; descriptions and locations of self-release beach sites; nest survey, marking, and relocation results; and hatching and emerging success of nests.
14. In the event a sea turtle nest is excavated during construction activities, the permitted person responsible for nesting surveys and/or egg relocation for the project must be notified so the eggs can be reburied.
15. Upon locating a sea turtle adult, hatchling, or egg harmed or destroyed as a direct or indirect result of the project, notification must be made to the FWC, Bureau of Marine Enforcement (formerly the Florida Marine Patrol) at 800-342-5367. Care should be taken in handling injured turtles or eggs to ensure effective treatment or disposition, and in handling dead specimens to preserve biological materials in the best possible state for later analysis.

The Service believes that incidental take will be limited to the approximately 0.85 mile of beach that has been identified for groin construction. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. The Service believes that no more than the following types of incidental take will result from the proposed action: (1) destruction of all nests that may be constructed and eggs that may be deposited and missed by a nest survey and marking program within the boundaries of the proposed project; (2) destruction of all nests deposited during the period when a nest survey and marking program is not required to be in place within the boundaries of the proposed project; (3) reduced hatching success due to egg mortality during relocation and adverse conditions at the location site; (4) harassment in the form of disturbing or interfering with female turtles attempting to nest within the groin construction area or on adjacent beaches as a result of construction activities or groin presence; (5) behavior modification of nesting females or hatchlings due to the presence of the groins which may act as barriers to movement; (6) behavior modification of nesting females if they dig into shallowly buried groins, resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to deposit eggs; (7) misdirection of hatchling turtles on beaches adjacent to the construction area as they emerge from the nest and crawl to the water as a result of project lighting; (8) behavior modification of nesting females due to escarpment formation within the project area during a nesting season, resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to deposit eggs; (9) behavior modifications of hatchlings if they encounter the groins, resulting in entrapment, obstruction, or predation; and (10) destruction of nests from escarpment leveling within a nesting season when such leveling has been approved by the Service.

The amount or extent of incidental take for sea turtles will be considered exceeded if the project results in more than 0.85 mile of beach being constructed with groins. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new

information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Corps must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. Construction activities for this project and similar future projects should be planned to take place outside the sea turtle nesting and hatching season.
2. Surveys for nesting success of sea turtles should be continued for a minimum of 3 years following groin construction to determine whether sea turtle nesting success has been adversely impacted.
3. More in-depth research should be conducted to assess the potential of the groin structures to impact nesting sea turtles, nest incubation, and movement of hatchlings from the nest to the ocean.
4. Educational signs should be placed where appropriate at beach access points explaining the importance of the area to sea turtles and/or the life history of sea turtle species that nest in the area.

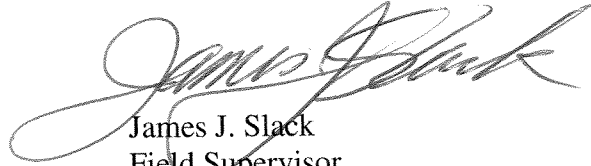
In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Should you have additional questions or require additional clarification regarding this matter, please contact Melody Ray-Culp at 772-562-3909, extension 263.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "James J. Slack", written in a cursive style.

James J. Slack
Field Supervisor
South Florida Ecological Services Office

cc.

Service, Ecological Services, Jacksonville, Florida (Nicole Adimey)
FWC, Office of Protected Species Management, Tallahassee, Florida (Robbin Trindell)
FWC, Office of Environmental Services, Punta Gorda, Florida (Jim Beever)
DEP, Division of Beaches and Coastal Systems, Tallahassee, Florida
NMFS, Habitat Conservation Division, St. Petersburg, Florida
NMFS, Protected Resources Division, St. Petersburg, Florida
EPA, West Palm Beach, Florida
Miami-Dade County, Department of Environmental Resources Management, Miami, Florida

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Table 1. Length (feet) of removed and reconstructed groins, measured from vegetation line.

Groin	Length Removed	Length Rebuilt
1	220	220 (295)
2	190	190 (240)
3	200	200
4	205	120
5	215	60

^a length including T-head sections

Table 2. Sea turtle nesting data from the State of Florida's Index Nesting Beach Survey program for 1998 through 2004 for three FWC survey zones (B. Brost, FWC, personal communication, 2005). Data for 2005 (B. Ahern, MDPR, personal communication, 2005) are not complete as they represent information collected only as of August 29, 2005.

Year	Zone	<u>Loggerhead</u>		<u>Green</u>		<u>Leatherback</u>	
		Nests	False Crawls	Nests	False Crawls	Nests	False Crawls
1998	M	5	21	0	0	0	0
	N	12	13	0	0	0	0
	O	19	11	0	0	0	0
1999	M	17	36	0	0	0	0
	N	29	28	0	0	0	0
	O	36	20	0	0	0	0
2000	M	12	9	0	0	0	0
	N	20	18	0	0	0	0
	O	15	6	2	1	0	0
2001	M	10	8	0	0	0	0
	N	27	21	0	0	0	0
	O	20	9	0	0	0	0
2002	M	8	10	0	0	0	1
	N	14	8	2	2	0	0
	O	13	5	5	4	0	0
2003	M	13	19	0	0	0	0
	N	18	16	0	0	0	0
	O	16	7	0	0	0	0
2004	M	7	7	0	0	0	0
	N	9	38	1	0	0	0
	O	7	7	0	0	0	0
2005	M	12	6	0	0	0	0
	N	17	11	0	0	0	1
	O	10	4	2	3	0	0

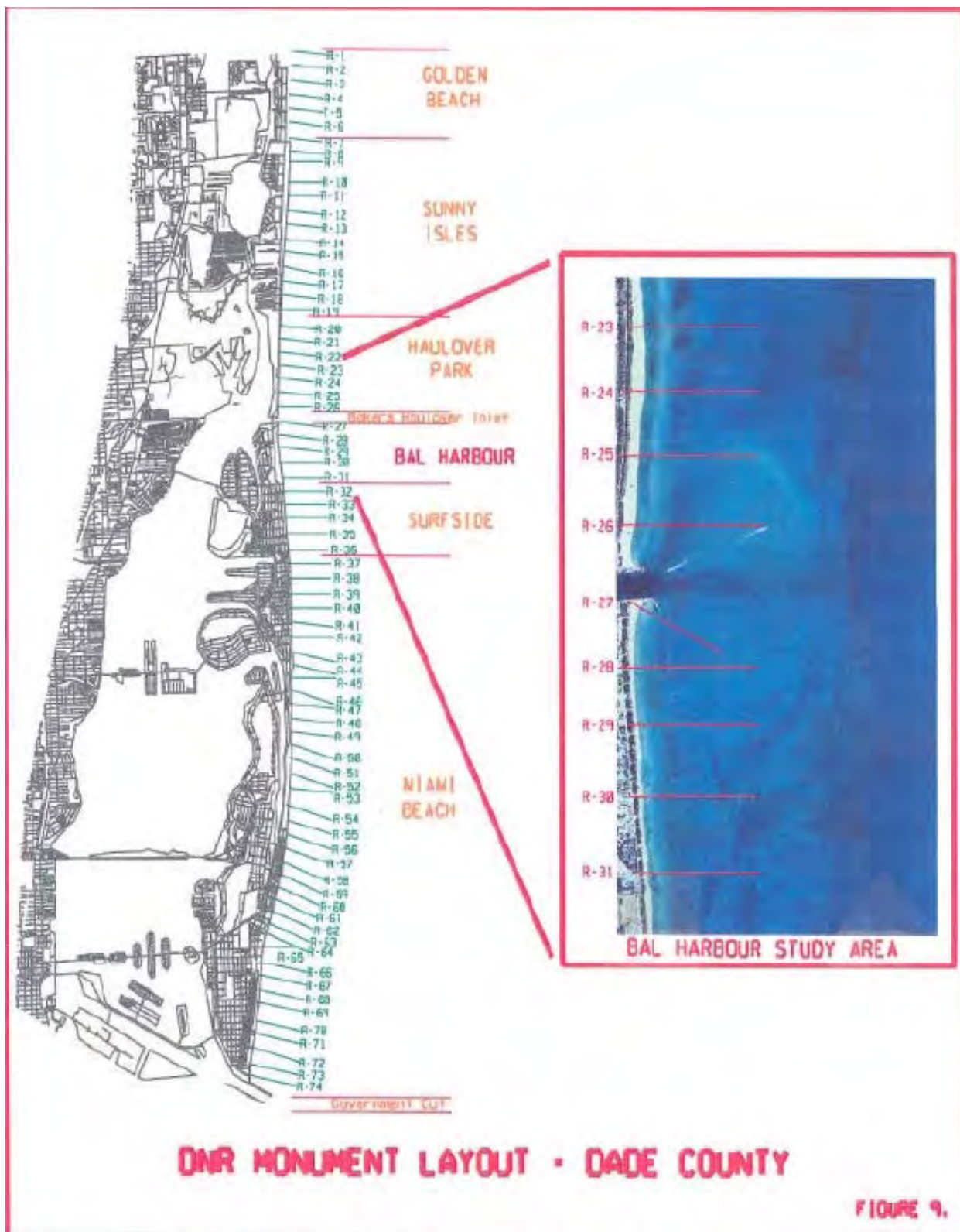


Figure 1. Bal Harbour project area and R monuments.



Figure 2. Bal Harbour project area showing placement of five reconstructed groins. Groins will be completely covered by sand when the beach is in its renourished condition, and the post-construction MHW line is in the position shown.

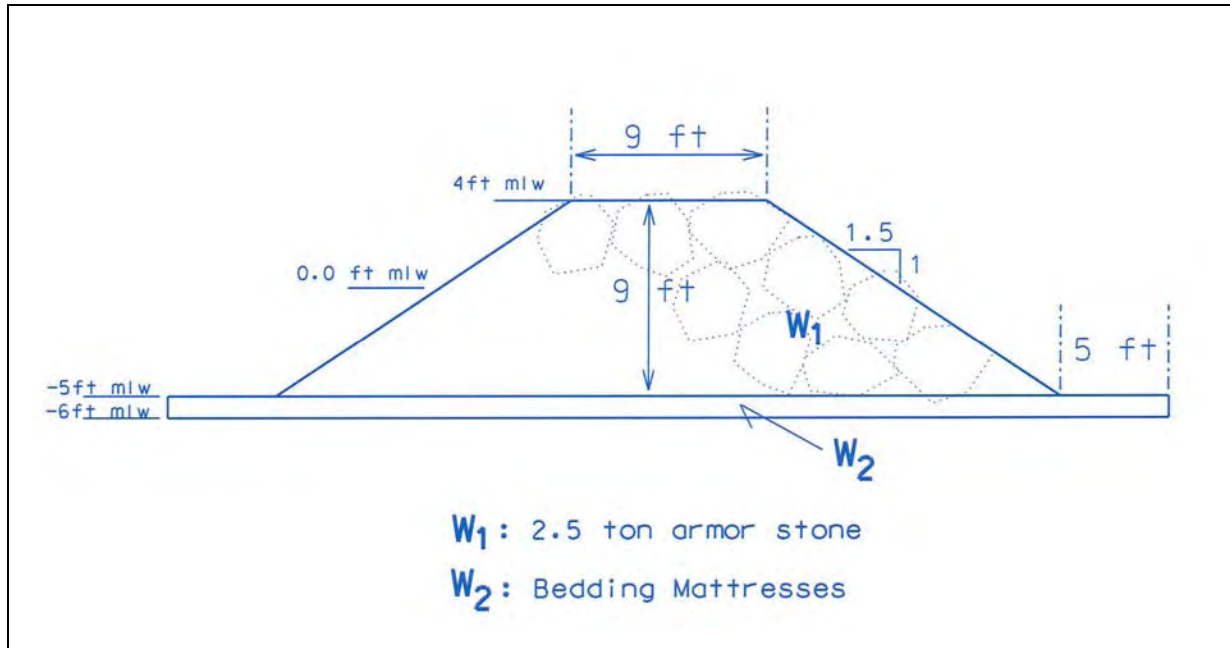


Figure 3. Groin cross-section.

SUB-Appendix D

Pertinent Correspondence & Responses
to Comments Received from circulation of the

April 2004 Scoping Letter
and
June 2005 Draft Finding of No Significant Impact
&
Environmental Assessment

PROPOSED MODIFICATIONS To 5 GROINS (GMs)
BETWEEN BEACH MONUMENTS R-27 AND R-31.5

Bal Harbour Beach Erosion Control Project

Bal Harbour
Dade County, Florida

RESPONSE TO COMMENTS

Bal Harbour Beach Erosion Control Project, Dade County, FL. Modifications to 5 Groins

Appendix D, contains written comments received from the routing of the June 30, 2005 letter which transmitted the website on which the Environmental Assessment (EA) is posted.

The Corps received State and Federal comments on the June 30, 2005 preliminary EA and FONSI for the removal/reconstruction of five groins. Groins 1 and 2 will be entirely rebuilt with T-Head structures (new element) in their original footprint. Groin 3 will also be rebuilt in its current footprint, but groins 4 and 5 will be rebuilt at reduced lengths to promote sand by-pass. The purpose of the work is to better stabilize the Bal Harbour, Dade County, Florida shoreline between periodic beach renourishments. All correspondence is contained in Appendix D.

Based on information contained in the draft EA, the Florida Department of Environmental Protection (DEP), State Clearinghouse determined that, at this stage, the proposed activity is consistent with the Florida Coastal Management Program. However, DEP's Bureau of Beaches and Coastal Systems raised several questions on specific project planning, engineering and design issues. The answers to their questions are available in the Detailed Design Report (DDR) at: <http://planning.saj.usace.army.mil/envdocs/envdocsb.htm> under the Table Headings of: PROJECT: Dade County, Proposed Action: Bal Harbour Segment, and Notices and Public Documents: Detailed Design Report - Main Text-Draft Design Report. The Florida Fish and Wildlife Conservation Commission (FWC) provided comments related to: sea turtle nesting/hatching activity; T-head groin construction effects; and, Florida's Marine Turtle Protection Act. The FWC issues were addressed at length in the U. S. Fish and Wildlife Service's Endangered Species Consultation, Appendix C; and, in Section 5.00, Environmental Commitments Section of the EA. The Corps has obtained an incidental take authorization from the U. S. Fish and Wildlife Service under the Federal Endangered Species Act. Accordingly, the project as planned is consistent with Florida's Marine Turtle Protection Act.

The U.S. Environmental Protection Agency and National Marine Fisheries Service did not send written responses to EA/FONSI circulation. When contacted, agency representatives said the project would not affect resources under their purview.

We trust that the Corps' response to comments received addresses all concerns and/or provides information adequate to allow individuals/agencies to avail themselves of information which will satisfy their needs. Please contact Mr. William Lang at 904-232-2615 for additional assistance.



Jeb Bush
Governor

Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Colleen M. Castille
Secretary

August 12, 2005

Mr. William Lang
Planning Division, Jacksonville District
U. S. Army Corps of Engineers
P. O. Box 4970
Jacksonville, FL 32232-0019

RE: Department of the Army, Jacksonville District Corps of Engineers – Draft Environmental Assessment – Bal Harbour Beach Erosion Control Project, Modifications to Five Erosion Control Groins – Bal Harbour, Miami-Dade County, Florida.
SAI # FL200507011238C (Reference SAI # FL200404135896C)

Dear Mr. Lang:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16, U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4231, 4331-4335, 4341-4347, as amended, has coordinated a review of the draft environmental assessment (EA).

The Florida Department of Environmental Protection (DEP), Bureau of Beaches and Coastal Systems continues to express serious concerns regarding the groin field replacement project's purpose and need, effectiveness, and potential impacts to coastal processes and wildlife habitat. Additional information will be necessary to justify replacement of the groins as proposed. Please refer to the enclosed DEP memorandum for further information.

The Florida Fish and Wildlife Conservation Commission (FWC) advises that although the draft EA indicates impacts to marine turtles will be minimized through ongoing relocation of all marine turtle nests from the beaches of Bal Harbour, the FWC has been working with the Marine Turtle Permit Holder in this area to reduce and eliminate, where practical, relocation of marine turtle nests. The nests of endangered green and leatherback sea turtles are not authorized to be relocated from the beach at this time. Because the T-head groins may cause take, the applicant should receive an incidental take authorization from the U.S. Fish and Wildlife Service to ensure consistency with § 370.12, *Florida Statutes*. Please see the enclosed FWC letter.

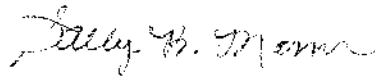
Based on the information contained in the draft EA and the enclosed state agency comments, the state has determined that, at this stage, the proposed activity is consistent with the Florida Coastal Management Program (FCMP). The applicant must, however, address the concerns identified by DEP and FWC staff prior to project implementation. The state's continued concurrence with the project will be based, in part, on the adequate resolution of issues identified

Mr. William Lang
August 12, 2005
Page 2 of 2

during this and subsequent reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting stage.

Thank you for the opportunity to review this project. If you have any questions regarding this letter, please contact Ms. Lauren P. Milligan at (850) 245-2170.

Sincerely,



Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/lm

Enclosures

cc: Roxane Dow, DEP, BBCS
Mary Ann Poole, FWC

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION



RODNEY BARRETO
Miami

SANDRA T. KAUPÉ
Palm Beach

H.A. "HERKY" HUFFMAN
Enterprise

DAVID K. MEEHAN
St. Petersburg

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Tampa

BRIAN S. YABLONSKI
Tallahassee

KENNETH D. HADDAD, Executive Director
VICTOR J. HELLER, Assistant Executive Director

MARY ANN POOLE, DIRECTOR
OFFICE OF POLICY AND STAKEHOLDER COORDINATION
(850)488-6661 TDD (850)488-9542
FAX (850)922-6679

August 4, 2005

Ms. Lauren Milligan
Florida State Clearinghouse
Department of Environmental Protection
3900 Commonwealth Blvd., MS 47
Tallahassee, FL 32399-3000

RECEIVED

AUG 08 2005

OIP/OLGA

Re: SAI #FL200507011238C, Department of the
Army, Jacksonville District Corps of
Engineers, Draft Environmental Assessment –
Modifications to Five Erosion Control
Structures – Bal Harbour, Miami-Dade
County

Dear Ms. Milligan:

Staff in the Florida Fish and Wildlife Conservation Commission (FWC) has reviewed the proposed project to modify five existing groins in Bal Harbour Beach (Miami-Dade County) to place t-heads on Groins #1 and #2, and offers the following comments.

The Draft Environmental Assessment indicates that potential take of marine turtles due to construction of shore-parallel t-heads on Groins #1 and #2 will be minimized due to ongoing relocation of all marine turtle nests from the beaches of Bal Harbour. FWC staff, in coordination with the U.S. Fish and Wildlife Service, has been working with the Marine Turtle Permit Holder in this area to reduce and to eliminate, where practical, relocation of marine turtle nests. At this time, the nests of endangered green and leatherback sea turtles are not authorized to be relocated from the beach.

Because the T-head groins may cause take, the applicant should receive an incidental take authorization from the U.S. Fish and Wildlife Service in order for this project to be consistent with Florida Statute 370.12, the Florida Marine Turtle Protection Act.

Ms. Lauren Milligan
August 4, 2005
Page 2

Thank you for the opportunity to comment on this project. If you or your staff would like to coordinate further on the recommendations contained in this letter, please feel free to contact me at 850-488-6661 or email me at maryann.poole@MyFWC.com, and I will be glad to help make the necessary arrangements. If your staff has any specific questions regarding our comments, I encourage them to contact Dr. Robbin Trindell at 850-922-4330 or at robbin.trindell@MyFWC.com.

Sincerely,



Mary Ann Poole, Director
Office of Policy and Stakeholder Coord.

map/rmt/ck

ENV 7-3

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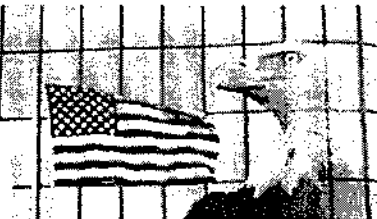
cc: Ms. Trish Adams, FWS-Vero
Mr. Stephen Blair, DERM
Mr. Jim Hoover, MTP
Mr. William Lang, ACOE-Jax
Mr. Marty Seeling, DEP



Florida

Department of Environmental Protection

"More Protection, Less Process"



Categories

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Project Information	
Project:	FL200507011238C
Comments Due:	07/31/2005
Letter Due:	08/15/2005
Description:	DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT CORPS OF ENGINEERS - DRAFT ENVIRONMENTAL ASSESSMENT, BAL HARBOUR BEACH EROSION CONTROL PROJECT, MODIFICATIONS TO 5 EROSION CONTROL GROINS - BAL HARBOUR, MIAMI-DADE COUNTY, FLORIDA.
Keywords:	ACOE - BAL HARBOUR BEACH EROSION CONTROL PROJECT, 5 GROINS - MIAMI-DADE CO.
CFDA #:	12.101
Agency Comments:	
SOUTH FL RPC - SOUTH FLORIDA REGIONAL PLANNING COUNCIL	
No Comments Received	
MIAMI-DADE -	
No Comment	
COMMUNITY AFFAIRS - FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS	
FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION	
<p>The Draft Environmental Assessment indicates that potential take of marine turtles due to construction of shore-parallel T-heads on Groins #1 and #2 will be minimized due to ongoing relocation of all marine turtle nests from the beaches of Bal Harbour. FWC staff, in coordination with the U.S. Fish and Wildlife Service, has been working with the Marine Turtle Permit Holder in this area to reduce and to eliminate, where practical, relocation of marine turtle nests. At this time, the nests of endangered green and leatherback sea turtles are not authorized to be relocated from the beach. Because the T-head groins may cause take, the applicant should receive an incidental take authorization from the U.S. Fish and Wildlife Service in order for this project to be consistent with Florida Statute 370.12, the Florida Marine Turtle Protection Act.</p>	
STATE - FLORIDA DEPARTMENT OF STATE	
No Comment	
ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION	
<p>The DEP Bureau of Beaches and Coastal Systems continues to express serious concerns regarding the groin field replacement project's purpose and need, effectiveness, and potential impacts to coastal processes and wildlife habitat. Additional information will be necessary to justify replacement of the groins as proposed.</p>	

For more information please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD MS-47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

JUN 30 2005

Planning Division
Environmental Branch

TO WHOM IT MAY CONCERN:

The U.S. Army Corps of Engineers, Jacksonville District has prepared an Environmental Assessment (EA) and Preliminary Finding of No Significant Impact (FONSI) to evaluate the removal of five existing groins in order to reconstruct them in their original footprint at reduced lengths with improved configurations. Groins 1 and 2 will be constructed with short T-heads. These measures are planned, along with continued periodic beach renourishment, to correct increased erosion along this project reach caused mainly by the degradation of the existing groin field. The purpose of the work is to better stabilize the Bal Harbour shoreline between periodic beach renourishment. This shoreline is part of the Dade County Beach Erosion Control and Hurricane Protection Project.

Pursuant to the Clean Water Act and the National Environmental Policy Act; we welcome your views, comments and information about resources, study objectives and important features within the described project area, as well as any suggested improvements, or objections. A copy of the Finding of No Significant Impact (FONSI) is enclosed. The draft Environmental Assessment and the draft Design Report are posted in the internet <http://planning.saj.usace.army.mil/envdocs/envdocsb.htm>. Letters of comment/inquiry should be sent to Mr. William Lang (904-232-2615), Planning Division, Environmental Branch and received within 30 days of the date of this letter. The final EA and FONSI will be posted when completed.

Sincerely,

64 
Stuart Appelbaum
Chief, Planning Division

Enclosure

U.S. ARMY CORPS OF ENGINEERS (Corps)
JACKSONVILLE DISTRICT
JUNE 2005

PRELIMINARY FINDING OF NO SIGNIFICANT IMPACT (FONSI)
BAL HARBOUR BEACH EROSION CONTROL PROJECT
For the PROPOSED MODIFICATIONS To 5 GROINS (GMs)
BETWEEN BEACH MONUMENTS R-27 AND R-31.5

I have reviewed the plans and the Environmental Assessment of the considered action. This Finding incorporates by reference all discussions and conclusions contained in the Environmental Assessment enclosed hereto. Based on information analyzed in the Environmental Assessment, reflecting data obtained from site examination and from cooperating Federal and State agencies having jurisdiction by law and/or special expertise, and from the interested public, I conclude that the considered action will have no significant adverse impact on the quality of the environment. The reasons for this conclusion are, in summary:

a. Site information review and coordination have led to the determination that the planned action will not adversely impact historical or archeological resources.

b. Precautions during construction will reasonably ensure that fish and wildlife resources, including threatened and endangered species will not be adversely affected.

c. The proposed project will be consistent with Florida's Coastal Zone Management Program.

d. Benefits to the public will be the protection of upland residences, businesses and associated infrastructure as well as turtle nesting habitat from storm generated wave energy and severe erosion.

In consideration of the information summarized, I find that the considered action does not require an Environmental Impact Statement.

Date:

Robert Carpenter
Colonel, U. S. Army
District Engineer



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning Division
Environmental Resource Branch

FEB 24 2005

Mr. James J. Slack
Field Supervisor
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960-3559

Dear Mr. Slack:

This reinitiates consultation under Section 7 of the Endangered Species Act (ESA) in conjunction with the proposed removal and replacement of 5 existing groins on Bal Harbour Beach, Dade County, Florida. The enclosed revised Biological Assessment (BA) is provided as biological information on the potential impacts of the proposed project on species listed under ESA.

Based on the information contained in the revised BA and documents previously sent in the February 3, 2005 letter initiating Endangered Species consultation; we have determined that the actions planned to complete this project may affect, and are likely to adversely affect nesting adult/hatchling loggerhead, green and leatherback sea turtles. Relative to manatees, the U.S. Army Corps of Engineers will implement the Standard Manatee Construction Conditions. Accordingly, the project may affect, but is not likely to adversely affect manatees. We request your concurrence with this our determination. If you concur, please respond within 30 days. Please call Mr. William Lang at 904 232-2615 if you have any questions.

Sincerely,

James Duck
Chief, Planning Division

Enclosure

24 FEB 2005
BIOLOGICAL ASSESSMENT
BAL HARBOUR, DADE COUNTY, FLORIDA
5 GROINS PROPOSED FOR MODIFICATIONS (GMs)
BETWEEN BEACH MONUMENTS R-27 AND R-31.5

1. Location: The project is located on the southeast Florida coast within Dade County. Bal Harbour is a coastal municipality in Dade County that has 0.85 mile of shoreline. This area is bounded by Bakers Haulover Inlet to the north and the town of Surfside to the south at 96th Street (figure 1, 2 & 3) respectively showing an aerial photo of existing condition, location and vicinity map, and the recommended plan.

2. Identification of Listed Species and Critical Habitat in the Area of the Proposed Activity: The Corps has identified the Florida manatee and the loggerhead, green and leatherback sea turtles as occurring in the project area.

3. Project Description: Project Authority. The Beach Erosion Control and Hurricane Protection (BEC & HP) Project for Dade County, Florida was authorized by the Flood Control Act of 1968 (see figure 1, site map - scoping map). In addition, Section 69 of the 1974 Water Resources Act (P.L. 93-251 dated 7 march 1974) included the initial construction by non-federal interests of the 0.85 mile segment along Bal Harbour Village, immediately south of Bakers Haulover Inlet. The Evaluation Report, Dade County BEC & HP Project, October 2001 study evaluated the performance of the entire Dade County BEC & HP project over the past 20+ years. The report identified several erosional hotspots along the project, including Bal Harbour, and formulated alternatives to reduce the higher erosion rates observed along these areas.

Finally, the Detailed Design Report, Dade County BEC & HP Project, Bal Harbor Segment, Dade County Florida, October 2004 (USACE, 2004) recommended the removal and replacement of five existing groins essentially in their original footprint (except groin #4 - offset 100' south) at reduced lengths configured to permit sand migration. Groins 1 and 2 will be built with short T-heads to reduce sediment loss. These measures are planned, along with continued periodic beach renourishment, to correct increased erosion along this project reach. The erosion increase is caused mainly by the deterioration of the existing groin field. The purpose of the work is to better stabilize Bal Harbour's shoreline between periodic beach renourishments.

4. Assessment of Potential Impacts of the Proposed Activity on Listed Species or Critical Habitat: Manatees forage in the project area and could be encountered during groin removal/reconstruction if the work is done when the beach project is in it's eroded state. Should this be the case, the Standard Manatee Construction Conditions should prevent adverse affects on the Manatee.

Adult sea turtles nest on Bal Harbour Beach and the predominant species is the

loggerhead sea turtle, *Caretta caretta*. Green turtles, *Chelonia mydas* and leatherback turtles, *Dermochelys coriacea* also nest here but at a much lower density. Hawksbill turtles, *Eretmochelys imbricata*; and Kemp's ridleys, *Lepidochelys kempii* are also known to exist in the area but do not nest at Bal Harbour. All the sea turtles except for the loggerhead are listed as endangered. The loggerhead is listed as threatened.

Loggerhead turtle nests are all relocated to the Miami-Dade hatchery facility. Nests of leatherback and green turtles are allowed to hatch naturally in-place. This latter situation could be problematic if as the turtles hatch they are released in proximity to the groins.

Once the groin system is in place; the beach will be more stable, retain sand for longer periods and significantly increase the time between beach renourishments. Greater stability should positively influence turtle nesting frequency/success. Additionally, erosion of turtle nesting habitat and loss of nests should be reduced as a result of project completion.

5. Efforts to Eliminate Potential Impacts on Listed Species:

Manatee: The usual contract provisions (Standard Manatee Construction Conditions) to educate work crews concerning the manatee's endangered and protected status will be implemented. Its presence/absence in the work area will be monitored daily and every precaution (including the shut-down of operations if appropriate) will be taken to avoid any encounter with or effect on this species.

Sea Turtles: According to the Miami-Dade County Park and Recreation Dept. (MDPR), turtle nesting on Miami's beaches has continued to cyclically increase since the 1980's when the program to monitor and evaluate turtle nesting began. The frequency of nesting along the beach at Bal Harbour has ranged from 12 nests in 1989 to 29 nests in 1999. The number of false crawls ranged from 1 in 1989 to 33 in 2003. The loggerhead accounts for the majority of the nesting in the county with occasional nesting by green and leatherback turtles.

During the sea turtle nesting season, the MDPR conducts daily surveys and relocates nests found along the beach from Sunny Isles south to Government Cut (includes Bal Harbour). This is done to prevent poaching or nest destruction due to beach maintenance, emergency vehicles which access the beach and other human related causes. All loggerhead nests found during the surveys are relocated to a central hatchery on Miami Beach (pers. comm., B. Ahern, MDPR, 2005). However, Green and Leatherback nests remain in situ and the eggs are allowed to hatch naturally after which there is a controlled release by MDPR. Nevertheless, these nests are also closely monitored by the MDPR.

Following construction of the Groins, the proposed T-heads would have the potential to impact sea turtle mobility. Although unlikely, they could prevent and/or possibly discourage adult female turtles from reaching the beach. However, this seems

unlikely in view of the amount of area obstructed vs. large open areas available for adult turtles to avoid such obstructions. The T-heads, however, could impede or trap hatchlings leaving the beach for the open ocean. Either situation could result in the take of sea turtles.

Accordingly, it is recommended that on those beach segments where T-head groins are needed to stabilize and retain the beach; the nests of all sea turtle species should be relocated to the hatchery facility; or, control released as distant as possible from T-head groins. This would reduce the possibility of any incidental take/s of hatchlings from nests marked/identified at Bal Harbour. Incidental take/s of threatened/endangered sea turtle hatchlings, which emerge from undiscovered nest/s, is possible.

6. Effect Determination: Because of the nature of the work and despite the precautions to be taken as described in this revised BA and section (5) above, the Corps has determined that the proposed action may affect, and is likely to adversely affect nesting adults and hatchling loggerhead, green and leatherback sea turtles. If nests of all sea turtle species at Bal Harbour beach (where T-head groins will be constructed) are relocated to Miami-Dade's hatchery facility; or control released at locations other than at those locations where T-head groins occur, the degree of negative affects to threatened and endangered species may be lessened. Nevertheless, incidental take of hatchlings emerging from undiscovered nests would still be possible. Relative to manatees, the Corps will implement the Standard Manatee Construction Conditions. Accordingly, the Corps has determined that the project may affect, but is not likely to adversely affect manatees.



Jeb Bush
Governor

Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Colleen M. Castille
Secretary

May 27, 2004

Mr. James C. Duck, Chief
Planning Division, Jacksonville District
U. S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

RE: Department of the Army, Jacksonville District Corps of Engineers – Scoping
Notice – Removal and Replacement of Five Erosion Control Groins – Bal
Harbour, Miami-Dade County, Florida.
SAI # FL200404135896C

Dear Mr. Duck:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16, U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4231, 4331-4335, 4341-4347, as amended, has coordinated a review of the referenced scoping notice.

The Department's (DEP) Bureau of Beaches and Coastal Systems has expressed serious concerns regarding the groin field replacement project's purpose and need, effectiveness, and potential impacts to coastal processes and wildlife habitat. Additional information will be necessary to justify replacement of the groins as proposed. Please refer to the enclosed DEP memorandum for further information.

The Florida Fish and Wildlife Conservation Commission (FWC) notes that the use of T-head groins on an active sea turtle nesting beach might not be consistent with Florida laws concerning protection of sea turtles, their nests, hatchlings, and nesting habitat. T-head groins have interfered with adult females attempting to nest and with hatchlings attempting to leave the beach. Staff requests additional information regarding the effects of the proposed structures on beach habitat. Please see the enclosed FWC letter for further details.

Based on the information contained in the public notice and enclosed comments, the state has determined that, at this stage, the allocation of federal funds for the above-referenced project is consistent with the Florida Coastal Management Program (FCMP). The applicant must, however, address the concerns identified by DEP and FWC staff in the attached comments. All subsequent environmental documents must be reviewed to determine the project's continued

"More Protection, Less Process"

Printed on recycled paper.

Mr. James C. Duck
May 27, 2004
Page 2 of 2

consistency with the FCMP. The state's continued concurrence with the project will be based, in part, on the adequate resolution of issues identified during this and subsequent reviews.

Thank you for the opportunity to review this project. If you have any questions regarding this letter, please contact Ms. Lauren P. Milligan at (850) 245-2161.

Sincerely,

Sally B. Mann

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/lm

Enclosures

cc: Roxane Dow, DEP, BBBS
Brian Barnett, FWC

Florida State Clearinghouse



MASON

FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

May 21, 2004

Mr. James C. Duck
Jacksonville District Corps of Engineers
Planning Division, Environmental Branch
P.O. Box 4970
Jacksonville, Florida 32232-0019

RE: DHR No: 2004-4242
Date Received: April 19, 2004
Bal Harbour Shoreline Improvement,
Removal & Replacement of Five Exist-
ing Groins
Bal Harbour, Dade County, Florida

DHR File No.: 2004-4268
Date Received: April 12, 2004
Temporary Deviation from Regulation
Schedule, Water Supply & Environment
(WSE) for Lake Okeechobee
Okeechobee County, Florida

Dear Mr. Duck:

Our office received and reviewed the above referenced projects in accordance with Section 106 of the *National Historic Preservation Act* of 1966, as amended, and 36 C.F.R., Part 800: *Protection of Historic Properties*. The State Historic Preservation Officer is to advise and assist federal agencies when identifying historic properties (archaeological, architectural, and historical) listed, or eligible for listing, in the *National Register of Historic Places*, assessing the project's effects, and considering alternatives to avoid or minimize effects.

Our review of the Florida Master Site File indicates that no significant archaeological or historical resources are recorded within the project areas. Furthermore, because of the location and/or nature of the projects it is unlikely that any such sites will be affected.

If there are any questions concerning our comments, please contact Janice Maddox, Historic Sites Specialist, by electronic mail at jmaddox@dos.state.fl.us, or by telephone at 850/245-6333. Thank you for your interest in protecting Florida's historic properties.

Sincerely,

Janice A. Kammerer, Supervisor

for Frederick Gaske, Acting Director, and
Deputy State Historic Preservation Officer

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
(850) 245-6300 • FAX: 245-6435

☐ Archaeological Research
(850) 245-6444 • FAX: 245-6436

☒ Historic Preservation
(850) 245-6333 • FAX: 245-6437

☐ Historical Museums
(850) 245-6400 • FAX: 245-6433

☐ Palm Beach Regional Office
(561) 279-1475 • FAX: 279-1476

☐ St. Augustine Regional Office
(904) 825-5045 • FAX: 825-5044

☐ Tampa Regional Office
(813) 272-3843 • FAX: 272-2340

COUNTY: MIAMI-
DADE

SAI-CORPS
2004-3923

DATE: 4/12/2004

COMMENTS DUE DATE: 5/12/2004

CLEARANCE DUE DATE: 5/27/2004

SAI#: FL200404135896C

MESSAGE:

STATE AGENCIES	WATER MNGMNT. DISTRICTS	OPB POLICY UNIT	RPCS & LOC GOVS
COMMUNITY AFFAIRS	SOUTH FLORIDA WMD	ENVIRONMENTAL POLICY UNIT	
ENVIRONMENTAL PROTECTION			
FISH and WILDLIFE COMMISSION			
X STATE			

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

- Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.
- X Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.
- Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.
- Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

DEPARTMENT OF THE ARMY, JACKSONVILLE
DISTRICT CORPS OF ENGINEERS - SCOPING
NOTICE - REMOVAL AND REPLACEMENT OF 5
EROSION CONTROL GROINS - BAL HARBOUR,
MIAMI-DADE COUNTY, FLORIDA.

To: Florida State Clearinghouse

AGENCY CONTACT AND COORDINATOR (SCH)
3900 COMMONWEALTH BOULEVARD MS-47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

EO. 12372/NEPA Federal Consistency

- | | |
|--|---|
| <input checked="" type="checkbox"/> No Comment | <input checked="" type="checkbox"/> No Comment/Consistent |
| <input type="checkbox"/> Comment Attached | <input type="checkbox"/> Consistent/Comments Attached |
| <input type="checkbox"/> Not Applicable | <input type="checkbox"/> Inconsistent/Comments Attached |
| | <input type="checkbox"/> Not Applicable |

From:

Division of Historical Resources
Bureau of Historic Preservation

Reviewer:

Janice Madrox *Laura B. Kammerer, Supervisor*

Date:

5/20/04

5/21/2004

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MAY 25 2004
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DIVISION OF
HISTORIC PRESERVATION
04 APR 16 AM 8:59

Memorandum

Florida Department of Environmental Protection

TO: Lauren P. Milligan
Office of Intergovernmental Programs

FROM: Roxane R. Dow
Bureau of Beaches and Coastal Systems

DATE: May 18, 2004

SUBJECT: USACE Scoping Notice: Removal and Replacement of Groins at Bal Harbour,
Miami-Dade County, SAI # FL04-5896C

The Bureau of Beaches and Coastal Systems is perplexed by the U.S. Army Corps of Engineers' (USACE) proposal to consider replacement of the groin field at Bal Harbour. The structures are not an authorized component of the Dade County Beach Erosion Control and Hurricane Storm Protection Project or of the Florida Strategic Beach Management Plan. They were originally constructed in 1927, and have essentially been buried since 1975. The reach is not considered an erosional "hot spot" and periodic placement of dredged sand from Bakers Haulover Cut partially mitigates the inlet-induced erosion.

Removal or replacement of the groins will require a permit from the Bureau pursuant to Chapters 161, 253, and 373, *Florida Statutes*, and the approved Florida Coastal Zone Management Program. The USACE or the local sponsor must obtain the appropriate state lands authorization for use of sovereignty submerged lands. Removal of the existing structures must be conducted in such a manner as to minimize impacts to coastal processes, and disposal conducted in an acceptable manner and location. The Bureau will need monitoring data and computations showing effectiveness (or lack of) of the existing groins. Further, the Bureau will require data and analysis showing the difference in performance and impact between the existing structures and the proposed structures; and engineering design computations which justify the number of structures, structural dimensions, spacing, orientation, and design details.

The Florida Fish and Wildlife Conservation Commission will have concerns about the impacts of exposed structures on feeding, nesting, and hatchling marine turtles, and possibly critical shorebird habitat.

Thank you for the opportunity to comment. Please call me if you have any questions.

cc: Mike Barnett
Paden Woodruff
Marty Seeling
Ralph Clark
Tim Gray

South
Florida
Regional
Planning
Council



May 18, 2004

Mr. James C. Duck
Chief, Planning Division
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

RE: SFRPC #04-0455, Corps #FL200404135896C, Corps evaluation of removal and replacement of five existing beach groins, City of Bal Harbour, Miami-Dade County.

Dear Mr. Duck:

We have reviewed the above-referenced evaluation announcement and have the following comments:

- Council staff generally agrees that the proposal will benefit the South Florida region and will further our goals for a more livable, sustainable, and competitive South Florida.

Thank you for the opportunity to comment. Please do not hesitate to call if you have any questions or comments.

Sincerely,

David Dahlstrom, AICP
Senior Planner

DD/kal

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

RODNEY BARRETO
MiamiSANDRA T. KAUPF
Palm BeachH.A. "HERKY" HUFFMAN
EnterpriseDAVID K. MEEHAN
St. PetersburgJOHN D. ROOD
JacksonvilleRICHARD A. CORBETT
TampaBRIAN S. YABLONSKI
TallahasseeKENNETH D. HADDAD, Executive Director
VICTOR J. HELLER, Assistant Executive DirectorBRIAN S. BARNETT, INTERIM DIRECTOR
OFFICE OF ENVIRONMENTAL SERVICES
(850)488-6661 TDD (850)488-9542
FAX (850)922-5679

May 14, 2004

Ms. Lauren Milligan
Environmental Consultant
Florida State Clearinghouse
Department of Environmental Protection
3900 Commonwealth Blvd., MS 47
Tallahassee, FL 32399-3000

RECEIVED

MAY 18 2004

OIP/OLGA

Re: SAI #FL200404135896C,
Department of the Army,
Jacksonville District Corps of
Engineers, Scoping Notice -
Removal and Replacement of Five
Erosion Control Groins - Bal
Harbour, Miami-Dade County,
Florida

Dear Ms. Milligan:

Staff in the Florida Fish and Wildlife Conservation Commission (FWC) has reviewed the proposed project to remove five existing groins from Bal Harbour Beach and to replace them with short t-head groins (Groins #1 and 2) or with groins without t-heads (Groins 3, 4 and 5), and offers the following comments.

The beaches in this area are utilized for nesting by loggerhead, green, leatherback, and rarely hawksbill turtles. The use of t-head groins on an active sea turtle nesting beach might not be consistent with Florida laws concerning protection of sea turtles, their nests, hatchlings, and nesting habitat. Placement of a submerged or exposed t-head structure parallel to the shoreline between open water and the beach could interfere with adult female turtles attempting to nest. In Palm Beach County, t-head groins have interfered with sea turtle hatchlings attempting to leave the beach. The overall effect of the t-head structure could alter the amount of dry sandy beach available for sea turtle nesting landward of the structure. In the past, t-head groins have only been authorized by the state in those areas with little to no sea turtle nesting habitat remaining, such as armored shorelines.

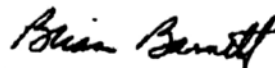
The following potential impacts of t-head groins on sea turtles and their nesting habitat must be understood prior to placement of such structures on an active sea turtle nesting beach.

Ms. Lauren Milligan
May 14, 2004
Page 2

1. How will the t-head structure alter the proportion of dry sandy beach relative to sandy intertidal or subtidal beach landward of the structure?
2. How will the average depth of intertidal and subtidal habitat change after construction of the t-head groins?
3. How will the t-head structures alter typical on-shore sand transport processes?

Thank you for the opportunity to comment on this project. If you have any questions regarding these comments, please contact me, or Dr. Robbin Trindell at (850) 922-4330.

Sincerely,



Brian S. Barnett, Interim Director
Office of Environmental Services

bsb/rnt
ENV 7-3
A:\mail 5894c.doc

cc: Ms. Trish Adams, FWS-Vero
Mr. Stephen Blair, DERM
Mr. Jim Hoover, MTP
Mr. Paul Stevenson, ACOE-Jax
Ms. Terri Jordan, ACOE-Jax
Mr. Marty Seeling, DEP



Florida

Department of Environmental Protection

"More Protection, Less Process"



Categories

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Project Information	
Project:	FL200404135896C
Comments Due:	05/12/2004
Letter Due:	05/27/2004
Description:	DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT CORPS OF ENGINEERS - SCOPING NOTICE - REMOVAL AND REPLACEMENT OF 5 EROSION CONTROL GROINS - BAL HARBOUR, MIAMI-DADE COUNTY, FLORIDA.
Keywords:	ACOE - REMOVAL/REPLACEMENT OF 5 EROSION CONTROL GROINS - BAL HARBOUR, MIAMI-DADE
CFDA #:	12.101
Agency Comments:	
SOUTH FL RPC - SOUTH FLORIDA REGIONAL PLANNING COUNCIL	
MIAMI-DADE -	
ENVIRONMENTAL POLICY UNIT - OFFICE OF POLICY AND BUDGET, ENVIRONMENTAL POLICY UNIT	
No Comment	
COMMUNITY AFFAIRS - FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS	
Released Without Comment	
FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION	
The use of T-head groins on an active sea turtle nesting beach might not be consistent with Florida laws concerning protection of sea turtles, their nests, hatchlings, and nesting habitat. T-head groins have interfered with adult females attempting to nest and with hatchlings attempting to leave the beach. Staff requests additional information regarding the effects of the proposed structures on beach habitat.	
STATE - FLORIDA DEPARTMENT OF STATE	
No comment/Consistent	
ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION	
The DEP Bureau of Beaches and Coastal Systems has expressed serious concerns regarding the groin field replacement project's purpose and need, effectiveness, and potential impacts to coastal processes and wildlife habitat. Additional information will be necessary to justify the proposed replacement activities.	
SOUTH FLORIDA WMD - SOUTH FLORIDA WATER MANAGEMENT DISTRICT	
Released Without Comment	

For more information please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD MS-47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

Visit the [Clearinghouse Home Page](#) to query other projects.

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

APR 09 2004

TO WHOM IT MAY CONCERN:

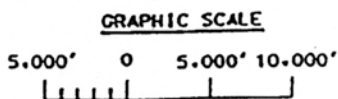
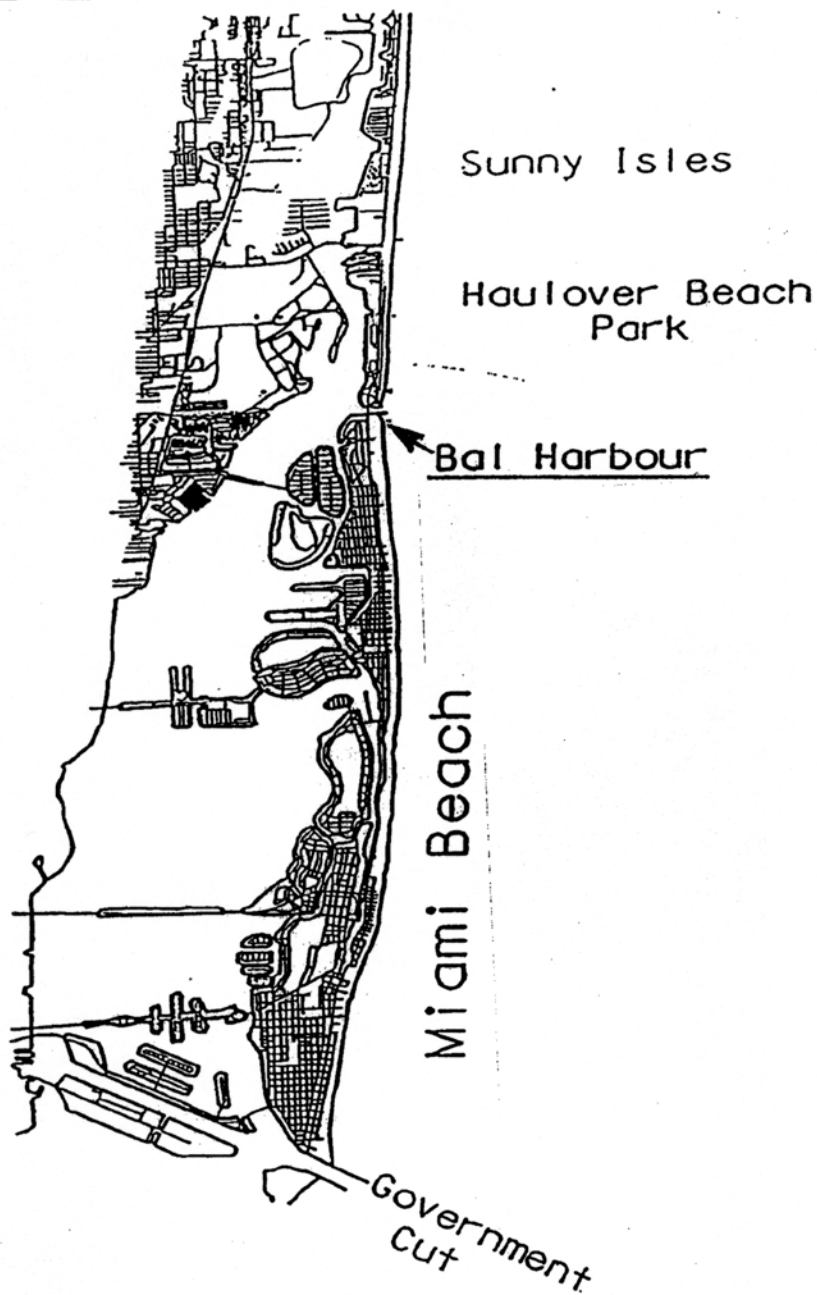
The Jacksonville District, U.S. Army Corps of Engineers will evaluate the removal and replacement of five existing groins essentially in their original footprint (except #4 - offset 100' south) at reduced lengths configured to reduce and more uniformly distribute erosional losses along the length of Bal Harbour. Groins 1 and 2 will be built with short T-heads to reduce sediment loss between the south jetty and groin 2. In order to avoid interruption of sediment flow, groins 3, 4 and 5 will be constructed without T-heads and groins 4 and 5 will be tapered to increase sand bypassing near the southern project limit.

We welcome your views, comments and information about resources, study objectives/features within the described project area, as well as suggested improvements or objections. Letters of comment or inquiry should be sent to the letterhead address to the attention of the Planning Division, Environmental Branch, Atlantic Coast Section and received by this office within 30 days of the date of this letter.

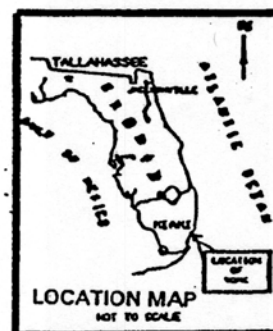
Sincerely,

James C. Duck
Chief, Planning Division

Enclosures



LOCATION MAP



US ARMY CORPS
OF ENGINEERS
JACKSONVILLE DISTRICT

DADE COUNTY SHORE PROTECTION PROJECT

DATE:

LOCATION MAP

SHEET NO. .

SCALE: AS SHOWN

Bal Harbour DM

Summary of the Recommended Plan.

General Description of Plan. The recommended plan of improvement along the Bal Harbour shoreline consists of three primary elements : removal of the five existing groins, reconstructing these five groins in an improved configuration, and continued periodic beach renourishment. For simplicity, the groins will be numbered 1 through 5 proceeding from north to south along the Bal Harbour shoreline. Each element of the plan is briefly described below.

Removal of Existing Groin Field. Five king-pile groins were constructed along the Bal Harbour shoreline prior to the construction of the Federal beach renourishment project in 1975. These groins have deteriorated over the years and are currently ineffective and will be removed (figure 1). Removal will consist of extracting the concrete piles and excavating any of the horizontal panels between the piles which might remain. Removal of each groin will extend from the seaward tip of each structure landward to the vegetation line. No disturbance of the existing beach vegetation will be allowed during removal or reconstruction of the groins. The lengths of structure to be removed are listed in table 1 below. A typical existing groin (groin #4) is shown in figure 2 .

The piles will be extracted intact, and any remaining horizontal panels will be removed by excavating down to depth of -5 feet, mlw. A pile of scattered rubble can be seen at the seaward end of each of the five groins; this material likely was placed as toe protection and will also be removed. Additional rubble may be scattered along the entire alignment of each groin. It should be noted that the landward portion of the groin field remains buried beneath the beach fill so the exact condition of the structures is unknown. The concrete king piles, concrete horizontal connecting panels, and excavated rubble will all be stockpiled off-site for later use by the local sponsor, possibly as material for artificial reef construction.

Reconstruction of Groin Field. Following removal of the five king pile groins, groins 1, 2, 3, and 5 will be rebuilt along the same shore-perpendicular alignments using a rubble-mound design. In order to achieve a more uniform spacing throughout the groin field, groin 4 will be reconstructed 100 feet to the south of its present location. By relocating groin 4 in this manner, an even spacing of about 800 feet will be achieved between each of the five groins. The landward limit of construction for each of the five rebuilt groins is the vegetation line, located between 95 and 120 feet seaward of the Erosion Control Line (ECL). All five rebuilt groins will use the same rubble-mound design, which is described below.

In order to better stabilize this reach of the Bal Harbour shoreline, the following improvements to the groin field are recommended. Groins 1 and 2 will be reconstructed along their present alignments to the post-nourishment mean high water line, and T-heads will be added to the seaward ends of both structures to reduce the losses of sediment from this reach of shoreline. These T-segments will extend 25 feet outward from the centerline of each jetty. Both T segments on groin 2 and the south T segment on groin 1 will be oriented roughly shore-parallel. The north T segment on groin 1 will be oriented 6 degrees to the east of shore-parallel, and will extend outward 50 feet from the structure's centerline. The

orientations of all T-head segments were chosen to lie perpendicular to the predominant direction of incoming wave energy for maximum effectiveness.

The remaining groins to the south (groins 3, 4, and 5) will be reconstructed without the T-head segments. Furthermore, as an added measure to prevent downdrift erosion caused by excessive impoundment of sand behind the structures, groins 4 and 5 will be tapered in length to allow increasing amounts of bypassing near the southern limit of the project. A plan view of the proposed reconstructed groin field is shown in figure 3. The lengths of each groin to be removed and rebuilt are shown in table 1 below.

Table 1
Lengths of Groin Removal and Reconstruction – Recommended Plan

	Length Removed ¹	Length, Rebuilt ¹
Groin 1	250	220 (295) ²
Groin 2	215	190 (240) ²
Groin 3	240	205
Groin 4	220	145
Groin 5	220	85

¹ Measured from vegetation line

² Including T-head sections

The cross-section of each groin will be identical, and is described as follows. Armor stone size will be 2.5 tons, corresponding to an average stone size of about 3 feet. Armor stone density will not be less than 165 pcf. The crest elevation will be 4 feet mhw and crest width will be 9 feet. The foundation of each groin will be constructed at -5 feet mhw, which coincides with the maximum expected depth of scour around the structures. A bedding layer 1 foot thick will be constructed under the armor layer, and no intermediate or core stone will be used. The foundation will consist of graded bedding stone contained within marine-grade mesh mattresses, and the mattresses will extend 5 feet beyond the limits of the armor stone for scour protection. Woven geotextile fabric will be placed under the foundation mattresses. A cross-section of the proposed design is shown in figure 4. The T-sections on groins 1 and 2 will also be constructed using this design cross section.

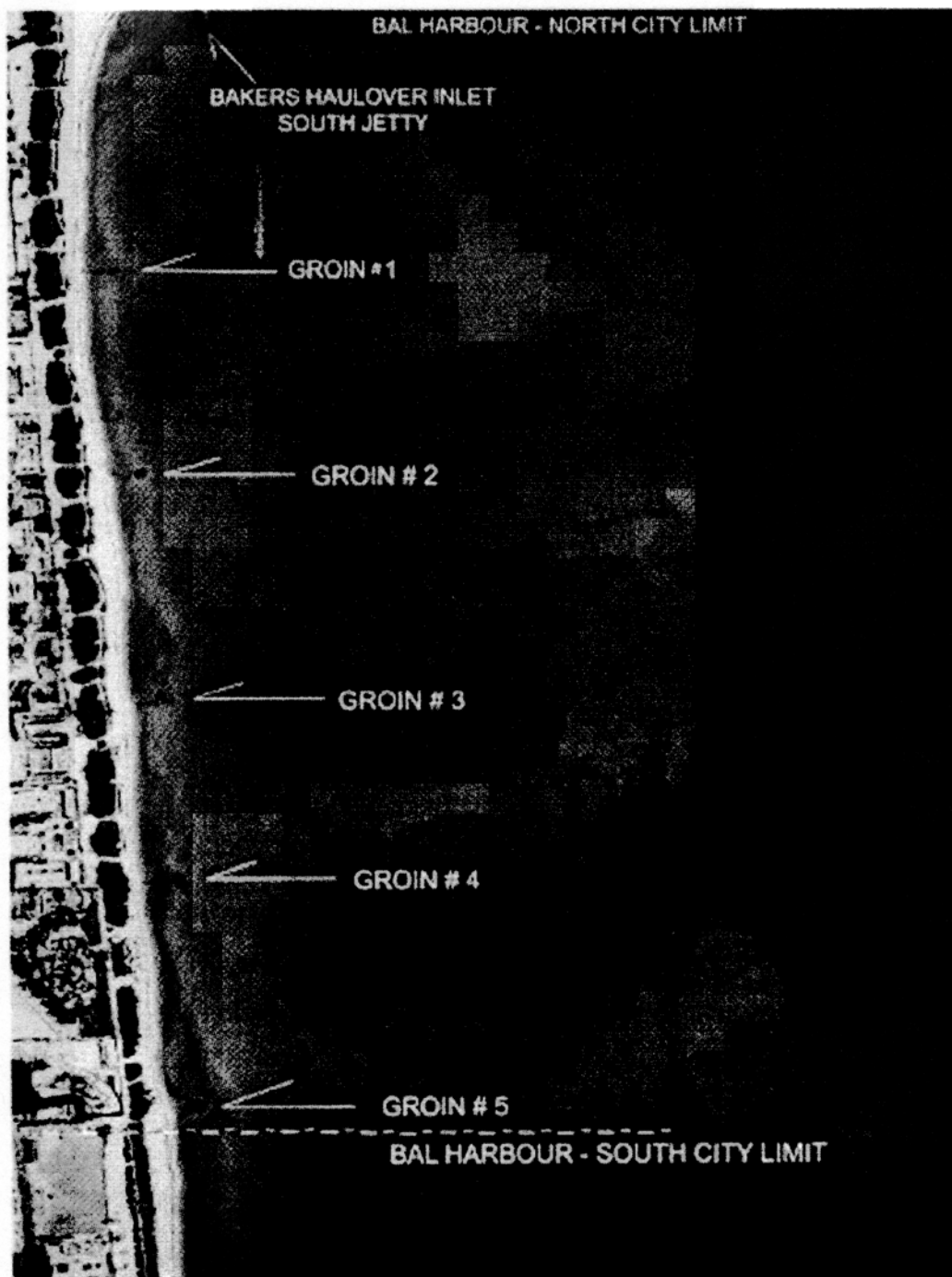


FIGURE 1. EXISTING CONDITIONS.



FIGURE 2. TYPICAL EXISTING GROIN

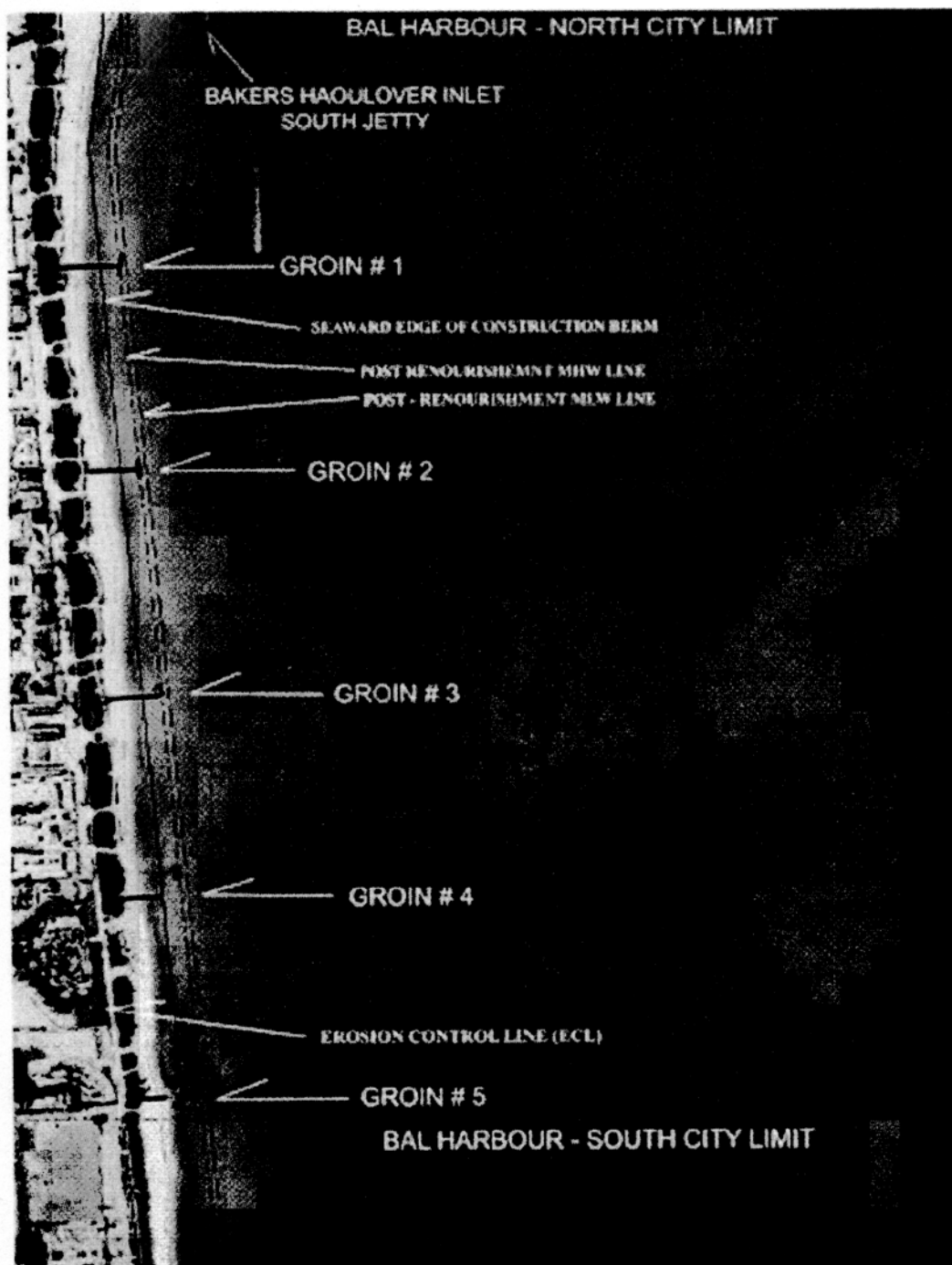


FIGURE 3. RECOMMENDED PLAN.

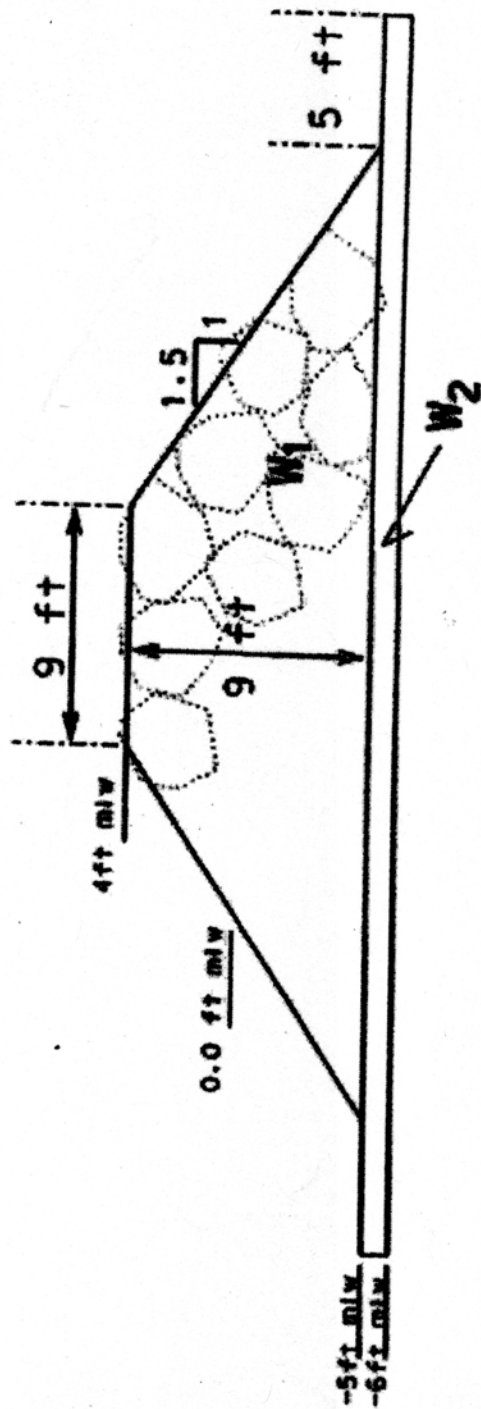


Figure 4. Typical Groin Cross-section



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5511
(727) 824-5317; FAX (727) 824-5300
<http://sero.nmfs.noaa.gov/>

February 5, 2007

F/SER4:JK/pw

Colonel Paul L. Grosskruger
District Engineer, Jacksonville District
Department of the Army Corps of Engineers
Jacksonville Regulatory Office, South Permits Branch
PO Box 4970
Jacksonville, Florida 32232

Dear Colonel Grosskruger:

NOAA's National Marine Fisheries Service (NMFS) has reviewed draft Environmental Assessment (EA), dated October 25, 2005, for the proposed modifications to the beach erosion control project at Bal Harbour between monuments R-27 and R-31.5 in Miami-Dade County, FL. The Jacksonville District's initial determination is that the project would not have a substantial adverse impact on essential fish habitat (EFH). As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the following comments are provided pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

According to the EA, the five existing groins were constructed in the 1950's and no longer provide adequate shoreline protection. The last beach fill was completed on June 28, 2006, and was linked to the maintenance of Bakers Haulover Inlet, a federal navigation channel. While the action currently proposed by the Jacksonville District does not include placement of sand on the beach, we note that such action is covered by an EA, dated March 2, 2002, for the Dade County Beach Erosion and Control and Hurricane Protection. Alternative S-3, which is the preferred alternative in the current EA, involves the removal of five king pile groins. These groins will be replaced with two T-head and three rubble mound groins. The total volume of excavation is 4,500 cubic yards. According to the EA, the total quantity of stone required to construct the preferred alternative includes 6,252 tons of armor stone, 1,759 tons of foundation mattresses, and 3,032 square yards of geotextile fabric.

Given that the work would largely occur within the same footprint of the existing groins (or within 100 feet of the existing groins), coupled with the 800-foot buffer to the nearest hard bottom resources¹, NMFS has determined that the project is not likely to have an adverse impact

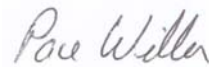
¹ Corps of Engineers, March 2, 2002 Dade County Beach Erosion and Control and Hurricane Protection EA



on EFH provided best management practices are followed to control turbidity and sedimentation; these practices would be required by the water quality certification issued for the project. Therefore, we conclude that the requirements of the Magnuson-Stevens Act have been met for this project.

Thank you for the opportunity to provide comments. Related questions or comments should be directed to the attention of Ms. Jocelyn Karazsia at our West Palm Beach office, which is co-located with the US Environmental Protection Agency at USEPA, 400 North Congress Avenue, Suite 120, West Palm Beach, Florida, 33401. She may be reached by telephone at (561) 616-8880 x207 or by e-mail at Jocelyn.Karazsia@noaa.gov.

Sincerely,



/ for

Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

cc: (via electronic mail)

EPA, WPB
FWS, Vero Beach
FWC, Tallahassee
FDEP, WPB
FDEP OBCS, Tallahassee
NMFS, PRD
F/SER47, Karazsia

Jordan, Terri L SAJ

From: Jordan, Terri L SAJ
Sent: Friday, January 19, 2007 2:07 PM
To: 'Miedema.Ron@epamail.epa.gov'; 'Miller.Gerald@epamail.epa.gov'
Cc: Barnett, Dennis W SAD; Higgins, Jamie M SAD
Subject: FW: Bal Harbour DDR Final EA (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi guys - hope the New Year is going well for both of you.

I am finalizing our administrative record for the Bal Harbour Detailed Design Report with regard to NEPA and Environmental review and comments from the agencies. I have been trying to get something from EPA since mid-November 2006 about either a desire to review and comment or a lack of desire to provide formal comments.

I have reviewed all my correspondence records and phone logs - and since I have been unable to get a written response out of either the Atlanta office or the West Palm office - this email will serve as formal documentation of my efforts to obtain some comments from EPA, and that based on the documentation, The Corps believes that EPA has no comments to offer - unless I receive something else from EPA.

I have included the original email to Ron dated 11/20/2006 to help refresh memories.

Correspondence Log

November 20, 2006 - Email to Ron Miedema about the project, previous coordination statements, concern that the EPA had in fact not been consulted with. Confirmation of delivery via email receipt (original email included below).

November 28, 2006 - Spoke with Ron Miedema at Port Everglades HEA meeting - he confirmed he received the email and that he would review his records to see if the EPA had either provided comments on the project, or planned to and provide me with email correspondence for the record.

December 4, 2006 - Email from Ron Miedema - EPA West Palm - "Terri, I went through my file and found nothing on this project. I'm in the process of contacting Atlanta (Gerald Miller) to see if the NEPA folks made any comments or want to due to your extension allowed. Ron"

December 13, 2006 - phone call from Ron stating he planned to try and contact Atlanta one more time to determine if they planned to offer comments. I returned the call and requested an email from Ron for the record. None received.

December 13, 2006 - phone call to Gerald Miller - EPA Atlanta - requesting he contact me about the project to ensure he had received necessary documents for review and to see if he planned to comment. Requested return phone call. None received

January 18, 2007 - phone call to Gerald Miller explaining I was looking for comments, or a confirmation on the lack of comments from EPA on the EA and requested he return the phone call to my cell phone. No return call received.

-----Original Message-----

From: Jordan, Terri L SAJ
Sent: Monday, November 20, 2006 11:48 AM
To: 'Jocelyn.Karazsia@noaa.gov'; 'Miedema.Ron@epamail.epa.gov'
Cc: Stevens, Charles F SAJ; Dugger, Kenneth R SAJ
Subject: Bal Harbour DDR Final EA

Hey guys - wanted to touch base with you about this project. As I've previously told you (Ron I think I told you - Jocelyn, I know I have - 9/22 email and previous phone call), the Jacksonville District completed an EA for groin replacement at Bal Harbour in Sept 2005 with a final EA and FONSI (FONSI dated Nov 2005). I was asked to take over this project and

during the review of the EA - I became concerned that I did not see comments from either of your agencies. As I read further - I located the following statement "The U.S. Environmental Protection Agency and National Marine Fisheries Service did not send written responses to EA/FONSI circulation. When contacted, agency representatives said the project would not affect resources under their purview." There were no dates or names included regarding who was communicated with and I can not find any supporting documentation to back up this statement. Given that the documentation is lacking, I spoke to my leadership - and the decision was made to make sure that NMFS and EPA got one more bite at the apple - this time a documented bite.

I am attaching a BA I just completed for NMFS-PRD that has a summary of the project (so you can avoid the whole DDR and EA if you chose) and a link to the DDR and EA (the EA is appendix A of the DDR).

http://planning.saj.usace.army.mil/envdocs_A-D/Dade_Co/BeachErosionandHurricanProtection/index.html

Jocelyn - EFH was included in the EA - it's in section 3.07 of the EA and a general discussion of Fish and Wildlife resources in Section 3.04. I DO NOT claim to be the author of this EA, but can research questions you may have.

I was able to verify that both of your offices were mailed the EA and FONSI, and were included in the scoping letter as well.

Can I ask for a review and comments in 45 days? That would be Thursday January 4, 2007. If you have no comments - can you please send an email to that effect for the record?

Thanks much and have a great Thanksgiving.

Terri Jordan
Biologist
Environmental Branch - Planning Division
Jacksonville District - SAD
US Army Corps of Engineers

Phone: 904-232-1817
Fax: 904-232-3442
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Classification: UNCLASSIFIED
Caveats: NONE

Tracking:

Recipient

'Miedema.Ron@epamail.epa.gov'
'Miller.Gerald@epamail.epa.gov'
Barnett, Dennis W SAD
Higgins, Jamie M SAD

Delivery

Delivered: 1/19/2007 2:07 PM
Delivered: 1/19/2007 2:07 PM

Planning Division
Environmental Branch

DEC 18 2006

Mr. Michael Barnett
Florida Department of Environmental Protection
Bureau of Beaches and Coastal Systems
3000 Commonwealth Boulevard
Mail Station 300
Tallahassee, Florida 32399-3000

Dear Mr. Barnett:

(Copy enclosed) *TH*

This letter conveys a Memorandum for the Record regarding a conference call between the Florida Department of Environmental Protection (FLDEP) and the U.S. Army Corps of Engineers (Corps) that took place on October 18, 2006 to respond to FLDEP's comments received on the Bal Harbour DDR and Draft Environmental Assessment (EA). These comments were prepared by Ms. Roxane Dow of the Bureau of Beaches and Coastal Systems (BBCS) on May 18, 2004. A review of the coordination for this project shows comments prepared by Ms. Dow was in response to the request for scoping comments, but no additional comments were received from BBCS. However a letter was received from FLDEP, Office of Intergovernmental Affairs (OIA) dated August 12, 2005 after review of the Draft EA. The letter contained the following paragraph:

"The Florida Department of Environmental Protection (DEP), Bureau of Beaches and Coastal Systems continues to express serious concerns regarding the groin field replacement project's purpose and need, effectiveness, and potential impacts to coastal processes and wildlife habitat. Additional information will be necessary to justify replacement of the groins as proposed. Please refer to the enclosed DEP memorandum for further information."

The memorandum referenced is the May 18, 2004 memorandum from Ms. Roxane Dow to Ms. Lauren Milligan of the OIA. This memorandum served as the list of agenda items for the conference call of October 18, 2006. Based on the results of the conference call, the Corps believes that it has addressed the comments raised by the May 18, 2004 memorandum and OIA's letter of August 12, 2005. If you have any additional questions, please contact Ms. Terri Jordan of my office at 904-232-1817 or via email at Terri.L.Jordan@saj02.usace.army.mil.

Sincerely,

Marie G. Burns
Chief, Environmental Branch

Enclosure

Memorandum for the Record – Dated October 18, 2006
Terri Jordan - Project Biologist
Environmental Branch, Planning Division, Jacksonville District

RE: Response to FLDEP Comments dated May 18, 2004 in a memo from Ms. Roxane Dow, FLDEP Bureau of Beaches and Coastal Systems to Ms. Lauren P. Milligan, FLDEP Office of Intergovernmental Programs.

On Wednesday October 11, 2006 – Jacksonville District and FLDEP staff participated in a conference call to address FLDEP comments and concerns on the DDR for the Bal Harbour Segment of the Dade County Beach Erosion Control Project. The report and all the Appendices (including the Environmental Assessment and FONSI) are located at http://planning.saj.usace.army.mil/envdocs_A-D/Dade_Co/BeachErosionandHurricaneProtection/index.html.

Attendees on the Conference call were – Charles Stevens, COE Project Manager; Tom Martin, COE Coastal Engineer; Terri Jordan; Project Biologist; Lynn Zediak, Real Estate Specialist; Michael Barnett, FDEP - Bureau Chief; Steve MacLeod, FDEP – ES III, JCP Section; Roxane Dow, FDEP – ES III, BEC Section; Paden Woodruff, FDEP –Program Administrator, BEC Section; Wagner Yajure, Project Manager (Contract), BEC Section.

The Corps reviewed the history of the project and discussed the methodology used to determine the need to place sand in this project area and replace the existing king pile groins. Dade County and the Corps have identified five “erosional hot spots” within the boundaries of the Federal project. Tom Martin reviewed the models developed for the project and engineering plan formulation to determine the preferred alternative. Specific sections of the report were reviewed and cited in response to DEPs concerns about need and engineering.

Roxane Dow raised the issue of who holds the State lands lease for the land under the groins, and the Corps agreed to follow up. Lynn Zediak said that she was not able to determine if a lease existed and Bryan Flynn with DERM said that he was unable to determine if a lease existed with the local community. DERM has committed to prepare a lease application package for DEP to meet this requirement. This is in agreement with the COE/DEP SOP. An email dated October 25, 2006 from Roxane Dow to Terri Jordan confirmed that the Village of Bal Harbour did in fact hold the easement for the groins. It was issued in 1987 for repair of the groins and expired in 1990. The new one will likely be for the life of the groins. There is also historical information about the construction. See at

<http://199.73.242.56/image.asp?index=1&id=142072&qryid=48801.06&imageid=142072&page=1&format=p>

FLDEP asked if comments received from the Florida Fish and Wildlife Conservation Commission had been addressed in the report and EA. In a letter dated August 4, 2005, the FWC offered the following comments 1) Due to changes in policy with FWC and

FWS, no relocations of green or leatherback nests would be permitted and 2) the project needs a separate biological opinion and incidental take statement. The Corps commits to adhere to the requirements of the Terms and Conditions of the USFWS biological opinion dated February 3, 2005 which also contains an incidental take statement for sea turtles. The biological opinion is located in Appendix C of the EA.

Planning Division
Environmental Branch

NOV 21 2006

Mr. David Bernhart
National Marine Fisheries Service
Southeast Regional Office
Protected Species Resources Division
263 13th Avenue South
St. Petersburg, Florida 33701

Dear Mr. Bernhart:

The U.S. Army Corps of Engineers (Corps), Jacksonville District, has prepared a Detailed Design Report (DDR) for the Bal Harbour Segment of the Dade County Beach Erosion Control Project, Miami-Dade County, Florida. The DDR examines the performance of the Bal Harbour segment of the Federal Beach Erosion Control and Hurricane Protection Project at Dade County, Florida. Specifically, this report analyzes erosional areas along the Bal Harbour shoreline and determines the feasibility of providing additional shore protection measures to reduce rapid losses of beach fill along this segment of the project. The complete DDR and appendices (the Environmental Assessment is Appendix A) can be found at http://planning.saj.usace.army.mil/envdocs_A-D/Dade_Co/BeachErosionandHurricaneProtection/index.html Additional information was provided electronically via email to Ms. Audra Livergood of your Miami field office on September 25, 2006. That information should be considered part of this consultation package.

The preferred alternative of the DDR is to replace five existing king pile groins that are no longer functioning to slow erosion with five new groins. The construction may take place when the beach is in a fully nourished state, above the high water line, and should that occur, there will be no effect on species under National Marine Fisheries Service's (NMFS) jurisdiction. However, if construction takes place in an eroded state, some construction activities will occur below the high water line, and would potentially affect species under NMFS' jurisdiction.

Enclosed please find the Corps' Biological Assessment of the effects of the project as currently proposed on listed species in the action area. After preparing this Biological Assessment of the impacts of the proposed project, the Corps has determined that the proposed project may affect, but is not likely to adversely affect the green turtle (*Chelonia mydas*), loggerhead turtle (*Caretta caretta*), Kemp's ridley turtle (*Lepidochelys kempii*), Hawksbill sea turtle (*Eretmochelys imbricata*), leatherback turtle (*Dermochelys coriacea*), smalltooth sawfish (*Pristis pectinata*), elkhorn coral (*Acropora palmata*) and staghorn coral (*Acropora cervicornis*) may be affected by the implementation of the proposed action. We request that you concur with this finding.

-2-

If you have any questions, please contact Ms. Terri Jordan at 904-232-1817 or email terri.l.jordan@saj02.usace.army.mil.

Sincerely,

Marie G. Burns
Chief, Environmental Branch

Enclosure

eg cove
Jordan/CESAJ-PD-EC/1817/ALS
Dugger/CESAJ-PD-EC 20 Nov 06
Stevens/CESAJ-DP-C 11/20/06
Burns/CESAJ-PD-E
for Burns

L: group/pdec/Jordan/Bal Harbour Section 7 consultation – NMFS Coverletter

BIOLOGICAL ASSESSMENT TO THE NATIONAL MARINE FISHERIES SERVICE FOR BAL HARBOUR DETAILED DESIGN REPORT

The Corps has completed a Detailed Design Report (DDR) for the Bal Harbour Segment of the Dade County Beach Erosion Control Project, Miami-Dade County, Florida. The DDR examines the performance of the Bal Harbour segment of the Federal Beach Erosion Control and Hurricane Protection Project at Dade County, Florida. The preferred alternative of the DDR is to replace five existing king pile groins that are no longer functioning to slow erosion in the Bal Harbour section of the Federal project, with five new groins that will function to slow erosional rates. The construction may take place when the beach is in a fully nourished state, above the high water line, and should that occur, there will be no effect on species under the National Marine Fisheries Service's (NMFS) jurisdiction. However, if construction takes place in an eroded state, some construction activities will occur below the high water line, and would potentially affect species under NMFS' jurisdiction.

Project Location

Dade County is located along the southeast coast of Florida, and contains the city of Miami. Broward County (Ft Lauderdale) lies to the north, and Monroe County (Florida Keys) lies to the south of Dade County. The Dade County shoreline extends along two long peninsular barrier island segments and three smaller islands, each of which is separated from the mainland by Biscayne Bay. The city of Miami is located on the mainland, and a number of coastal communities are located along the barrier islands. These barrier islands vary in width from about 0.2 to 1.5 miles, with an average width of about 0.5 miles. Elevations along the entire coastal region (and much of the mainland) are low, generally less than 10 feet. Along the coastal region elevations are generally the highest along the coastline, sloping gradually downward toward the bay.

Bal Harbour (formally known as Bal Harbour Village) is located on the southernmost peninsular barrier island in Dade County. This island is bounded by Bakers Haulover Inlet to the north and Government Cut to the south, and contains the communities of (proceeding from north to south) Bal Harbour, Surfside, and Miami Beach. The Bal

Harbour segment of the Dade County Beach Erosion Control Federal project (Dade County BEC project) extends along the entire 0.85-mile length of the town's Atlantic shoreline. This reach of shoreline is fully developed, primarily with oceanfront hotels and condominiums.



Figure 1 - Baker's Haulover Inlet and Bal Harbour

Background

Development of the beaches in Dade County began early in the 1900s and by the 1930's, seawalls had been constructed along most of the length of the county's oceanfront to protect upland development, including along the length of Bal Harbour. In 1927 and 1930, a large number of groins were constructed along Miami Beach as part of a protective-works project at that time. The structures constructed in 1927 were typically 200 feet long and 300 feet apart, while the groins built in 1930 were typically 170 feet long and 250 feet apart. Both sets of groins were constructed of steel sheet-pile and were cross-braced with timber. Throughout the 1940's, 50's and 60's construction of large numbers of additional groins occurred along the remaining length of the county.

A continuous groin field extended along most of the length of the Dade County shoreline prior to construction of the Federal beach restoration project, which began in the late 1970's. Most of these structures remain in place today, buried by the existing Federal project. Five relic king-pile groins can be seen along the length of Bal Harbour as the beach fill recedes between project renourishments (Figure 1). Renovation of these groins has been identified in the DDR as being the preferred alternative to lessen the critical erosion occurring on this portion of the Federal Project.

The initial nourishment of the Dade County BEC was begun in 1975 with the placement of 1,625,000 cubic yards of material on the beach at Bal Harbour. Additional nourishment events under the Dade County BEC took place in 1987, 1990 and 2003. In addition to the periodic nourishment under the Dade BEC, Bal Harbour Beach is used as an operations and maintenance (O&M) dredging disposal area and while the beach itself may not require nourishment, the method of disposal of sand that has accreted in the intracoastal waterway is a form of sand bypassing around Baker's Haulover inlet. O&M Disposal events with placement on Bal Harbour beach occurred in 1977, 1980, 1984, 1987, 1990, 1994, 1998, 2003, with the most recent material placement begin completed on June 28, 2006.

An Environmental Assessment and a Finding of No Significant Impact for the use of Bal Harbour beach as a disposal area was completed in 1997 and can be located on the Jacksonville District's environmental documents website:

http://planning.saj.usace.army.mil/envdocs_A-D/Dade_Co/iwwvicintybakers/vicinitybakers.htm

The project area is located along the northernmost 0.85 miles of shoreline along the barrier island which extends from Government Cut (Miami Harbor) northward to Bakers Haulover Inlet. An aerial photograph of the Bal Harbour shoreline is provided in Figure 2. This reach of shoreline is completely developed with high-rise condominiums and hotels. The shoreline consists of an open sandy coast, with dense vegetation planted by the city along the back-beach area. This area has been developed by the city into a park which is widely used and contributes greatly to the area's aesthetics. Recent site inspections revealed that the vegetated area of the park has grown seaward to the point where it mostly covers the 95-foot width of the design berm along the length of Bal Harbour. This vegetated area contains a variety of tropical foliage including dense areas of coconut palms, sea oats, and sea grapes. Nature trails, benches, fences, a sprinkler system, and other park facilities are located within this area.



Figure 2 - Bal Harbour Shoreline & Existing Structures

Beach widths along Bal Harbour vary greatly according to position along the shoreline, and also with time relative to the last beach renourishment project. Historically, erosion rates are higher along the northern half of Bal Harbour and as a result beach widths are the narrowest in this region. Following each renourishment event, erosion is usually noted along this northern area first. Each full-scale beach renourishment results in the reconstruction of a 240-foot wide berm along Bal Harbour (as measured from the ECL, which is located along the western edge of the vegetated zone).

Five king pile groins were constructed along the length of Bal Harbour prior to construction of the Federal project. No construction plans or design data for these structures is available, either through the agency representing the local sponsor (Dade Environmental Resource Management - DERM) or through Bal Harbour's engineering department. Anecdotal evidence suggests that these structures were built in the 1950's. Each of the groins is similar in design, and consists of concrete king piles (slotted piles) between which horizontal panels can be placed to form a barrier. The tops of these piles are shown in Figure 3. It is not known how many of the horizontal panels between the king piles may still be in place - at this time the DDR was completed all five groins were completely buried from the 2003 Bal Harbour renourishment.



Figure 3 - Remnant King Pile groin

The king piles are driven in a line extending across the beach face at 10-foot centers. The top elevation of the seaward portion of the groins is about mean high water. The landward portions of these structures remain buried under the beach most of the time, so the exact dimensions and conditions of these portions of the structures can not

be readily determined by site inspection. Piles of rubble have been placed around the seaward tips of the five structures, presumably as scour protection. Some photographic evidence suggests that the rubble may extend along the length of the groins as well (see Figure 4). Following each renourishment of the Bal Harbour shoreline, all five groins are buried completely by the 240-foot wide construction berm.

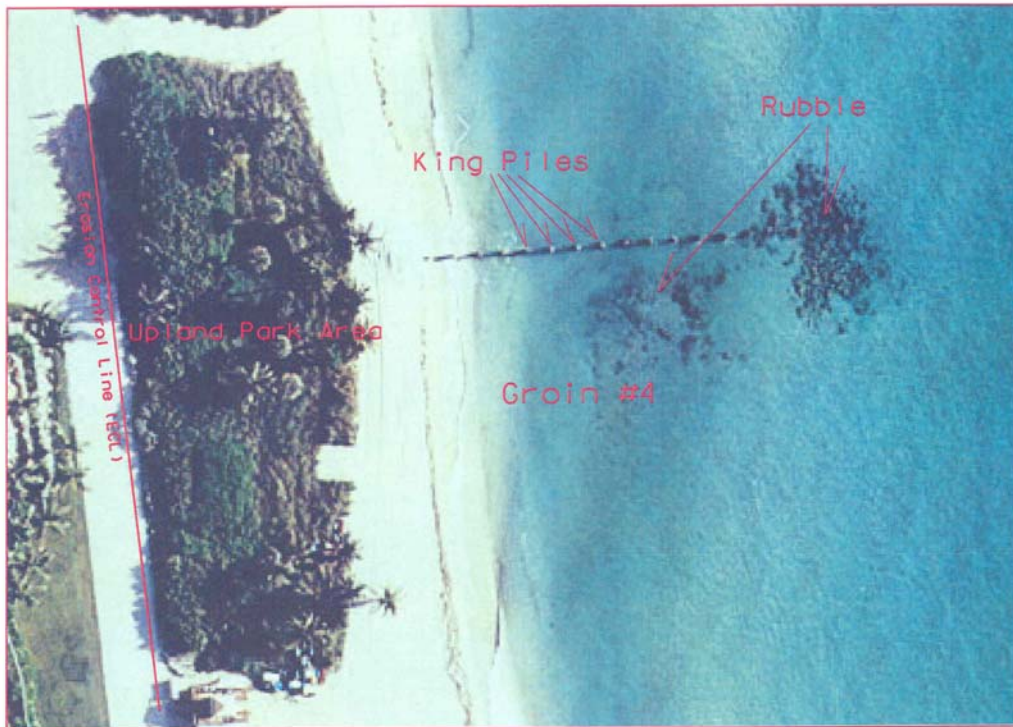


Figure 4 - Typical king pile groin, aerial view, with beach in eroded condition.

In the DDR, the relic groins are numbered 1 through 5 proceeding from north to south along the Bal Harbour shoreline, as previously shown in Figure 2. The spacing between the existing king pile groins are as follows : 1,100 feet between the Bakers Haulover Inlet south jetty and groin 1; 800 feet between groins 1 and 2; 900 feet between groins 2 and 3; 700 feet between groins 3 and 4; and 900 feet between groins 4 and 5.

DDR Preferred alternative - Alternative S-3. Construction of T- (or "Tuned-") Groin Field. The existing king pile groins would be removed and new rubble-mound groins constructed, either in the footprint of the original groins or in new locations. Two of the new groins will have a "T" structure added to the seaward end to increase performance

of the groin field by more effectively holding material between the structures, and by reducing rip currents and subsequent losses of fill into deep water. The T-head groin design has been used in similar locations to contain down drift losses near inlets.

Protected Species Under NMFS Jurisdiction Included in this Assessment

If the beach is not in an eroded state when groin replacement occurs and all activities take place above the mean high water mark, then there will be no effect on listed species under NMFS purview. Section 7 of the ESA does not require the Federal action agency to conduct Section 7 consultation if there is no effect (*Guidance for Streamlining the Consultation Procedures under Section 7 of the Endangered Species Act*). Impacts to nesting sea turtles due to groins are addressed by the US Fish and Wildlife Service in their Biological Opinion of 23 Sept 2005 found in Appendix C of the Bal Harbour Groin removal EA.

However, of the listed and protected species under NMFS jurisdiction occurring in the action area, the Corps believes that the green turtle (*Chelonia mydas*), loggerhead turtle (*Caretta caretta*), Kemp's ridley turtle (*Lepidochelys kempii*), Hawksbill sea turtle (*Eretmochelys imbricata*), leatherback turtle (*Dermochelys coriacea*), smalltooth sawfish (*Pristis pectinata*), elkhorn coral (*Acropora palmata*) and staghorn coral (*Acropora cervicornis*) may be affected by the implementation of the proposed action.

The Corps has reviewed the biological, status, threats and distribution information available through recovery plans, status reviews, previous biological assessments and biological opinions and believes that the following species will be in or near the action area and thus may be affected by the proposed project: the five sea turtle species; smalltooth sawfish and the Acroporid corals. Details of the life history and status of these species will not be repeated here. A list of references reviewed is in the literature cited.

While Johnson's seagrass (*Halophila johnsonii*) and designated critical habitat for Johnson's seagrass is found in Biscayne Bay, Dade County, including inside of Baker's Haulover inlet to the north of the proposed project area,

it has only been found growing in lagoons along approximately 200 km of coastline in southeastern Florida (NMFS, 2002) and has never been recorded in an open ocean environment or beach environment like at Bal Harbour and as such, the Corps believes that this project will have no effect on threatened Johnson's seagrass and no adverse modification of designated critical habitat. Based on this determination, there will be no further consideration of Johnson's seagrass in this assessment.

Sea Turtles

The impacts of dredging operations on sea turtles have been previously assessed by the National Marine Fisheries Service (NMFS, 1991; NMFS 1995; NMFS 1997; NMFS 2003) in the various versions of the South Atlantic Regional Biological Opinion (SARBO) and the 2003 (revised in 2005) Gulf Regional Biological Opinion. The life history of the five sea turtle species commonly found in South Florida, and the four most likely to be affected by in-water construction activities is found in GRBO as well as the species individual recovery plans are incorporated by reference (NMFS, 2003; NMFS and FWS, 1991; NMFS and FWS, 1991a; NMFS and FWS, 1992; NMFS and FWS, 1992a; NMFS and FWS, 1993; NMFS and FWS, 1995). Construction of the groin field will be done by mechanical dredge like a clamshell (also known as a bucket) dredge and a crane on a barge (Figure 4). The 1991 SARBO states that "clamshell dredges are the least likely to adversely affect sea turtles because they are stationary and impact very small areas at a given time. Any sea turtle injured or killed by a clamshell dredge would have to be directly beneath the bucket. The chances of such an occurrence are extremely low..." (NMFS, 1991). NMFS also determined that "Of the three major dredge types, only the hopper dredge has been implicated in the mortality of endangered and threatened sea turtles." This determination was repeated in the 1995 and 1997 SARBOs (NMFS, 1995 and 1997). Based on this determination made and repeated by NMFS in several consultations since the early 1990's, the Corps believes that the use of a clamshell or bucket dredge to remove the old groins and construct the new ones may affect, but is not likely to adversely affect listed sea turtles and has already been consulted on under the SARBO.



Figure 4 - A typical bucket/clamshell dredge which is used to excavate and lift the material mechanically by means of buckets or scoops.

Elkhorn and staghorn coral (Acroporid corals)

The Corps requested that Miami Dade Department of Environmental Resources Management (DERM) review all of their coral survey records (surveys conducted since 1985 3-4 days a week throughout the entire County), including any recent surveys to determine if either Acroporid coral had been documented in the vicinity of Bal Harbour. DERM had completed a hardground survey for Bal Harbour beach nourishment that was completed in August 2006 as part of the permitting process and no *Acropora sp.* were cited in the report results. In addition, the Corps contacted Mr. Steve Blair of DERM to request a specific review of the area offshore of Bal Harbour for *Acropora* corals for this consultation. In a September 26, 2006 email he states, "Regarding Bal Harbor: There are occasional, isolated colonies (usually <10 cm) seen on Second and first reefs through out Miami-Dade, so it may be somewhere 'off Bal Harbor'. The first reef is about 800 - 1000 feet off Bal Harbor, and the inshore side of that would not support *Acropora* (too much sand movement). Second reef is where we normally saw the *Acropora*, and that is at least .5 to 1 mile offshore." Based on this information from the Bal Harbour nourishment report and the information provided by DERM, the Corps determines that the construction of the groin field at Bal Harbour in an eroded state may affect, but is not likely to adversely affect the threatened *Acropora palmata* and *A.cervicornis*.

Smalltooth Sawfish

Smalltooth Sawfish, *Pristis pectinata* were once common in Florida as detailed by the draft Smallthooth sawfish recovery plan (NMFS, 2006) and are very rarely reported in

southeast Florida. The Corps requested sighting information from the Florida Fish and Wildlife Conservation Commission's (FWC) smalltooth sawfish sighting database on October 18, 2006 for the "area of North Dade County, near Baker's Haulover Inlet". In an email response dated October 31, 2006 FWC sawfish Biologist, Jason Seitz states, "There are no records of sawfish encounters in or near Bakers Haulover Inlet, separating Sunny Isles from Bal Harbor in North Miami. Miami-Dade County encounters are especially rare, and our combined database of several thousand United States encounters only lists eight records from this county, spread over more than a century (between 1895 and 2005). None of these records are known to be in the vicinity of Bakers Haulover Inlet. This certainly doesn't mean that *Pristis pectinata* does not utilize the inlet, as encounters with sawfish depend heavily on human usage of a given location. If low numbers of angling and diving are done in the area, it can be expected that little or no encounters will take place, even if sawfish frequent that area." Baker's Haulover Inlet is a high human use area, especially the flood shoal area on the inside of the inlet. The logic set forth about mechanical dredges in the 1991, 1995 and 1997 SARBOs for sea turtles holds true for sawfish as well. The 1991 SARBO states that "clamshell dredges are the lease likely to adversely affect sea turtles because they are stationary and impact very small areas at a given time. Any sea turtle injured or killed by a clamshell dredge would have to be directly beneath the bucket. The chances of such an occurrence are extremely low..." (NMFS, 1991)." The Corps believes that if this statement holds true for a species that is relatively abundant in south Florida like sea turtles, it should also hold true for a very rare species like sawfish. The probability of a sawfish being taken by a clamshell dredge is so unlikely as to be discountable. If the project is built in an eroded state, the Corps will incorporate the NMFS sawfish protection construction protocols into the plans and specifications. Based on the information included in the draft recovery plan, the census information from FWC and the proposed construction techniques, the Corps determines that the construction of the groin field at Bal Harbour in an eroded state may affect, but is not likely to adversely affect the endangered smalltooth sawfish.

Effects Determination

Based on the information presented here, the Corps determines that the replacement of the King pile groin system when the beach is in an eroded state may affect but is not likely to adversely affect the five listed sea turtle species, smalltooth sawfish and *Acropora palmata* and *A.cervicornis* and request that NMFS concur with this determination.

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UNITED STATES DEPARTMENT OF COMMERCE
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NATIONAL MARINE FISHERIES SERVICE

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FEB 28 2007

F/SER31:AL

Ms. Marie G. Burns
Chief, Environmental Branch
U.S. Army Corps of Engineers, Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232

Dear Ms. Burns:

This is in reply to your November 21, 2006, letter concerning the U.S. Army Corps of Engineers (COE) proposed groin replacement project along a 0.85-mile stretch of Bal Harbor beach in Miami-Dade County, Florida. Your letter transmitted a biological assessment (BA) describing the effects of the proposed action on endangered and threatened species under the purview of the National Marine Fisheries Service (NMFS). NMFS has also reviewed the Detailed Design Report (DDR) for the Dade County Beach Erosion Control and Hurricane Protection Project, Bal Harbor Segment (December 2005). In e-mails dated December 14, 2006, December 18, 2006, January 22, 2007, and February 14, 2007, the COE provided additional information on the proposed project design and measures that would be required to protect listed species. You determined in your BA that the proposed project is not likely to adversely affect the following listed species: the green turtle (*Chelonia mydas*), the loggerhead turtle (*Caretta caretta*), the Kemp's Ridley turtle (*Lepidochelys kempii*), the Hawksbill turtle (*Eretmochelys imbricata*), the leatherback turtle (*Dermochelys coriacea*), the smalltooth sawfish (*Pristis pectinata*), elkhorn coral (*Acropora palmata*), and staghorn coral (*Acropora cervicornis*). You requested our concurrence with your determination, pursuant to section 7 of the Endangered Species Act (ESA).

Your preferred alternative is to replace five non-functioning king pile groins with five new rubble-mound groins made of armor stones. Woven geotextile fabric will be placed beneath the footprint of each structure in the excavated areas; marine mattresses would be placed on top of the geotextile cloth to form the structure's foundation. The armor stones would be placed directly on top of the mattresses to construct the permeable rubble groins. The DDR (page 114) states that various groin lengths were simulated, with lengths varying from half to nearly double the length of the existing king-pile groin structures. The initial or baseline condition for the simulations was the post-nourishment configuration, which consists of a 240-foot berm, with a 1v:11h front slope. The seaward ends of each of the existing king-pile groins are at approximately the same position as the post-nourishment mean sea level (msl) line, which is about 310 feet seaward of the erosion control line (ECL); therefore, groins longer than the



existing king pile structures would protrude from the post-nourishment beach fill, while shorter structures would be embedded within the fill.

Under the preferred alternative, the northern three groins will extend seaward to the post-nourishment msl line, and the southern two groins will be tapered 6 degrees to reduce downdrift effects. T-heads will be constructed on the seaward ends of groins 1 and 2 (the northernmost groins) in order to reduce sediment losses from this reach of shoreline. Groins 1, 2, and 3 will be rebuilt over the existing king pile structures to the same seaward limit as the original structures. Groins 4 and 5 will be shorter than the original structures. Groin 4 will be rebuilt 100 feet south of its present location. You stated the average spacing between the new groins would be approximately 850 feet. The Detailed Design Report (DDR) (page 119) states the T-head on the northern groin (groin #1) will extend 50 feet to the north and 25 feet to the south from the seaward end of the structure. The northern segment of the T-head on groin 1 will be angled 10 degrees toward seaward to face directly into the average incident wave direction. The T-head on groin #2 will extend 25 feet to the north and the south (50 feet total length). Figure 15 of the DDR indicates the distance between groins 1 and 2 will be 800 feet; therefore, the minimum distance between the T-head groins (groins 1 and 2) at the seaward limit would be approximately 750 feet. The purpose of the proposed project is to better stabilize Bal Harbor's shoreline between periodic beach renourishments. You stated that the proposed action does not include any beach nourishment. Your BA states that construction may take place when the beach is in a fully nourished state, in which case, construction of the groins would be land-based (above the MHW line). You stated that construction of the project while the beach is in a fully nourished state may entail the use of a barge to hold the groin material. The barge would be anchored at night during construction. You stated that construction of the project while the beach is in a fully nourished state would not effect listed species under NMFS' purview. On the other hand, your BA states construction may take place when the beach is in an eroded state, in which case some construction activities would occur below the MHW line and would potentially affect species under NMFS' purview.

If the project is constructed when the beach is in an eroded state (i.e., worst case), the following construction methodology has been proposed: The existing king pile groins would be removed and the new groins would be constructed using a combination of land-based and barge-based construction. Construction materials would be transported to the site and placed by barge-mounted equipment. Offshore operations could be conducted only during periods of calm weather. You stated heavy equipment is likely to include backhoes, bulldozers, cranes, pumps, assorted hand tools, and sea-going barges and equipment associated with an operation on the water. Your BA states that construction of the new groin field will be accomplished by mechanical dredge (e.g., clamshell) and a crane mounted on a barge. Your BA states the COE will incorporate NMFS' March 23, 2006, Sea Turtle and Smalltooth Sawfish Construction Conditions ("Conditions").

Bal Harbor is located on the southernmost peninsular barrier island in Miami-Dade County, Florida. This island is bounded by Bakers Haulover Inlet to the north and Government Cut to the south. The Bal Harbor segment of the Dade County Beach Erosion Control (BEC) federal project extends along the entire 0.85-mile length of the town's Atlantic shoreline. This reach of shoreline is developed, primarily with oceanfront hotels and condominiums. FWS' Biological

Opinion states the proposed project is located on a sea turtle nesting beach. Miami-Dade County Parks and Recreation Department (MDPR) monitors this segment of the beach and relocates loggerhead sea turtle nests to a central hatchery on Miami Beach. Green and leatherback sea turtle nests are left in situ, and the eggs are allowed to hatch naturally. MDPR closely monitors these nests and controls the release of hatchlings into the sea. Controlled releases are conducted as far as possible from T-head groins.

If the project is constructed when the beach is in a fully nourished state and all work would take place landward of the MHW line, NMFS concurs with the COE there would be no effect on listed species under our purview. This concurrence is based on implementation of the Terms and Conditions included in the FWS' September 23, 2005, Biological Opinion for this project. However, if the project is constructed when the beach is in an eroded state, NMFS believes smalltooth sawfish, leatherback, loggerhead, green, Kemp's Ridley, and hawksbill turtles may be affected. The project area is not in critical habitat for any listed species; therefore, critical habitat will not be affected.

We have analyzed the proposed action i.e., construction while the beach is in an eroded state and believe the only routes of potential effects to smalltooth sawfish and sea turtles are from direct impacts associated with: 1) Operating construction machinery in open water; and 2) direct effects to nesting female sea turtles and hatchlings if the structures impede the ingress or egress of sea turtles. In addition, in-water construction may result in elevated turbidity levels that could indirectly affect sea turtles and smalltooth sawfish. Your BA states that a mechanical dredge (e.g., clamshell) will be used to construct the groin field. NMFS' 1991 Biological Opinion for the Dredging of channels in the Southeastern United States from North Carolina through Cape Canaveral, Florida, states that dredging with a clamshell dredge is unlikely to result in the take of sea turtles. Further, considering the COE's commitment to incorporate NMFS' Conditions, we believe direct impacts to sea turtles and smalltooth sawfish due to operating construction machinery are extremely unlikely to occur and therefore discountable.

If the groins are constructed while the beach is in a fully nourished state, the T-heads would be less likely to pose an obstruction to nesting female sea turtles since the distance of the T-head from the shoreline would be less than the distance from shore when the beach is in an eroded state. Whether the beach is in a fully nourished state or an eroded state, we believe that female nesting sea turtles attempting to reach the beach are unlikely to be impeded by the new groin structures due to the average spacing that is proposed between the structures (approximately 850 feet). Sea turtles are highly mobile and presumably would be able to swim around the T-heads on the two northernmost groins in order to reach the beach. Therefore, we believe that effects to female nesting sea turtles while they are in the water are insignificant. We believe that hatchlings swimming seaward from the beach are not likely to be impeded by the groin structures for the following reasons: 1) MDPR closely monitors leatherback and green sea turtle nests and controls the release of hatchlings into the sea. Controlled releases are conducted as far as possible from T-head groins; 2) MDPR monitors and relocates any loggerhead sea turtle nests to a central hatchery on Miami Beach; 3) due to the average spacing between groins (850 feet), hatchlings are not likely to be impeded by the structures. Based on the preceding, we conclude that effects to hatchlings would be insignificant. We believe any indirect impacts to sea turtles

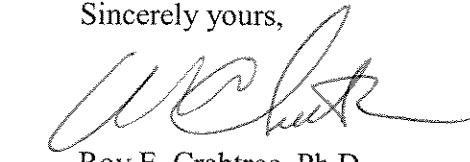
and smalltooth sawfish associated with elevated turbidity levels would be short-term and insignificant.

We believe there would be no effect on staghorn and elkhorn coral because we do not believe these species are present in the project area. Our determination is based on information provided in your BA. Specifically, the BA states Miami-Dade County Department of Environmental Resources Management (DERM) completed a resource survey in August 2006. Neither elkhorn nor staghorn coral were documented in the DERM survey. Furthermore, Steve Blair with DERM indicated that the second reef is typically where DERM has observed *Acropora* species. The second reef is located approximately 0.5 to 1.0 mile offshore, which is beyond the anticipated geographic scope of impacts for the proposed project.

We conclude that the proposed activity is not likely to adversely affect any ESA-listed species under our purview. This concludes the COE's consultation responsibilities under section 7 of the ESA. A new consultation must be initiated if there is a take, if new information reveals effects of the action to listed species or critical habitat in a manner or to an extent that was not previously considered; if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not previously considered; or if a new species is listed or critical habitat designated that may be affected by the identified action.

We have enclosed NMFS' Conditions and additional information on other statutory requirements that may apply to this action, as well as information on our Public Consultation Tracking System (PCTS), which allows you to track the status of this and other ESA consultations. If you have any questions on this consultation or how to access and use PCTS, please contact Audra Livergood at (305) 595-8352, or by e-mail at Audra.Livergood@noaa.gov.

Sincerely yours,



Roy E. Crabtree, Ph.D.
Regional Administrator

Enclosures (2)

cc: Jocelyn Karazsia, HCD Miami Office
File: 1514-22 F.1.FL
Ref: I/SER/2006/05977



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
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SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

The permittee shall comply with the following protected species construction conditions:

- a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.
- b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.
- c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.
- d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
- e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
- f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.
- g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006

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Additional Considerations for ESA Section 7 Consultations (Revised 12-6-2005)

Marine Mammal Protection Act (MMPA) Recommendations: The Endangered Species Act (ESA) section 7 process does not authorize incidental takes of listed or non-listed marine mammals. If such takes may occur an incidental take authorization under MMPA section 101 (a)(5) is necessary. Contact Ken Hollingshead of our NMFS Headquarters' Protected Resources staff at (301) 713-2323 for more information on MMPA permitting procedures.

Essential Fish Habitat (EFH) Recommendations: In addition to its protected species/critical habitat consultation requirements with NMFS' Protected Resources Division (PRD) pursuant to section 7 of the ESA, prior to proceeding with the proposed action the action agency must also consult with NMFS' Habitat Conservation Division (HCD) pursuant to the Magnuson-Stevens Fishery Conservation and Management Act's (MSA) requirements for essential fish habitat (EFH) consultation (16 U.S.C. 1855 (b)(2) and 50 CFR 600.905-.930, subpart K). The action agency should also ensure that the applicant understands the ESA and EFH processes; that ESA and EFH consultations are separate, distinct, and guided by different statutes, goals, and time lines for responding to the action agency; and that the action agency will (and the applicant may) receive separate consultation correspondence on NMFS letterhead from HCD regarding their concerns and/or finalizing EFH consultation.

Public Consultation Tracking System (PCTS) Guidance: PCTS is an online query system allowing federal agencies and U.S. Army Corps of Engineers' (COE) permit applicants to track the status of NMFS consultations under ESA section 7 and under MSA sections 305(b)2 and 305(b)(4): Essential Fish Habitat. Access PCTS via: www.nmfs.noaa.gov/pcts. Federal agencies are required to enter an agency-specific username and password to query the Federal Agency Site. The Corps Permit Site allows COE permit applicants the ability to check on the current status of Clean Water Act section 404 permit actions for which NMFS has conducted an ESA section 7 consultation with the COE since the beginning of the 2001 fiscal year (no password needed).

For COE-permitted projects, click on "Enter Corps Permit Site." From the "Choose Agency Subdivision (Required)" list, pick the appropriate COE district. At "Enter Agency Permit Number" type in the COE district identifier, hyphen, year, hyphen, number. The COE is in the processing of converting its permit application database to PCTS-compatible "ORM." An example permit number is: SAJ-2005-000001234-IPS-1. For the Jacksonville District, which has already converted to ORM, permit application numbers should be entered as SAJ (hyphen), followed by 4-digit year (hyphen), followed by permit application numeric identifier with no preceding zeros. E.g., SAJ-2005-123, SAJ-2005-1234, SAJ-2005-12345.

For inquiries regarding applications processed by Corps districts that have not yet made the conversion to ORM (e.g., Mobile District), enter the 9-digit numeric identifier, or convert the existing COE-assigned application number to 9 numeric digits by deleting all letters, hyphens, and commas; converting the year to 4-digit format (e.g., -04 to 2004); and adding additional zeros in front of the numeric identifier to make a total of 9 numeric digits. E.g., AL05-982-F converts to 200500982; MS05-04401-A converts to 200504401. PCTS questions should be directed to Eric Hawk at Eric.Hawk@noaa.gov. Requests for username and password should be directed to April Wolstencroft (PCTSUsersupport@noaa.gov).